



January 8, 2013

Certified Mail No: 91 7199 9991 7031 1308 6397

Federal Minor NSR Permit Coordinator U.S. EPA, Region 8 1595 Wynkoop Avenue, 8P-AR Denver, CO 80202-1129 Certified Mail No: 91 7199 9991 7031 1308 6403

Manuel Myore, Energy Minerals & Air Director P.O. Box 70 Fort Duchesne, Utah 84026

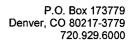
RE: Tribal NSR Registration – Multiple Compressor Stations

Anadarko Uintah Midstream, LLC ("Anadarko") is submitting these registrations in accordance with 40 CFR 49.160. The locations included are all existing minor source natural gas compressor stations and began operation prior to August 30, 2011. All stations are located in Uintah County, Utah. Anadarko is submitting these registrations prior to March 1, 2013 to meet the requirements of 40 CFR 49.160 (c) (1) (i). The attached registrations include the recommended forms, backup calculations and specifications for reporting total emissions for each facility.

The table below lists the compressor stations included in this package.

Faulty Name	Lougiion
Archie Bench	S11 T10S R22E
Bitter Creek	S19 T10S R22E
Blue Feather	S14 T9S R21E
Bonanza East	S11 T10S R23E
Bonanza West	S7 T10S R23E
Bridge	S9 T17S R22E
Diablo	S2 T10S R23E
East Bench	S32 T10S R22E
East Junior	S36 T9S R22E
L-16	S22 T9S R20E
Morgan States	S36 T9S R21E
North East	S10 T9S R21E
Sage Grouse	S32 T10S R22E
South	S16 T10S R21E
South East	S4 T10S R22E
Willow Creek	S32 T9S R21E







November 12, 2012

Sent Via Certified Mail No.: 91 7199 9991 7031 1308 6373

Ms. Kathleen Paser United States EPA, Region 8 Air and Toxics Division 1595 Wynkoop Street Denver, CO 80202-1129

RE: RICE MACT/NSPS JJJJJ Testing Notification

Ms. Paser:

Anadarko Uintah Midstream LLC is submitting this notice for the compliance demonstration for RICE MACT and NSPS Subpart JJJJ units at the compressor stations referenced in the attached table. The testing will be scheduled during the two week period listed in the table.

Testing will be conducted following the attached protocols.

Please feel free to contact me at 720-929-6867 or Chad.Schlichtemeier@anadarko.com with any questions.

Sincerely, ANADARKO UINTAH MIDSTREAM LLC

Chad Schlichtemeier Sr. Staff EHS Representative

cc: C. Rimer, T. Taggert and C. Anderton (electronic)



If you have any questions regarding these registrations please contact me at (720) 929-6867 or Chad.Schlichtemeier@Anadarko.com

Thank You,

Chad Schlichtemeier

Sr. Staff EHS Representative

Anadarko Uintah Midstream, LLC

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriat
	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.epa.gov/region08/air/permitting/tmpsr.html	

A. GENERAL SOURCE INFORMATION

II. GENERAL BOOKEE I	. II OIMIZITIOII			
1. Company Name		2. Source Name		
Anadarko Uintah Midstream, LL	С	Archie Bench Compressor	Station	
3. Type of Operation		4. Portable Source?	Yes No 🗸	
Natural Gas Compression		5. Temporary Source? Yes No V		
6. NAICS Code		7. SIC Code		
211111		1311		
8. Physical Address (home bas	se for portable sources)			
Remote Location near Ouray, U	=			
Themore Location flear Odray, O	tan			
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*	
Uinta and Ouray	Uintah	39.956212	-109.411466	
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*	
SW SW	11	10S	22E	
	1			

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address		-
PO BOX173779, Denver, CO 80217		
Email Address		
Telephone Number	Facsimile Number	
-	- 4-5444	
2. Operator Name (if different from owner)		Title
Same As Owner		
Mailing Address		
Email Address		THE PROPERTY OF CO.
·		
Telephone Number	Facsimile Number	
3. Source Contact		Title
Clayton Rimer	S	Senior Maintenance Foreman
Mailing Address		
1368 S 1200 E, Vernal, UT 84078		
Email Address		
Clayton.Rimer@anadarko.com		
Telephone Number	Facsimile Number	
435-781-7033		
4. Compliance Contact	Title	
Chad Schlichtemeier	Senior Staff EHS Repres	sentative
Mailing Address	d	
PO BOX 173779, Denver, CO 80217		
Email Address	· · · · · · · · · · · · · · · · · · ·	
Chad.Schlichtemeier@anadarko.com		
Telephone Number	Facsimile Number	
720-929-6867	720-929-7105	

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM₁₀, PM_{2.5}, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H₂SO₄), hydrogen sulfide (H₂S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM₁₀, PM_{2.5}, sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H₂SO₄), hydrogen sulfide (H₂S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Poliutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM ₁₀	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	58.4	58.4	NOx - Nitrogen Oxides
СО	5.2	5.2	CO - Carbon Monoxide VOC - Volatile Organic Compound
VOC	18.4	18.4	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (1) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input,
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code</u>: North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard Industrial Classification Code</u> (https://www.osha.gov/pls/imis/sic_manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. County: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
- 2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
- 3. <u>Source Contact</u>: The source contact must be the local contact authorized to receive requests for data and information.
- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. Allowable Emissions (See also, Potential to Emit): Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. Potential to Emit: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. Actual Emissions: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The Archie Bench Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. All engines were manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ and, therefore, the engines are not subject to the requirements of this subpart.

Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	JJJJ	ZZZZ
ARB 1	Gas	1340	Caterpillar	G3516 TALE	4EK04160	8/25/2004	4/13/2005	No	Area
ARB 2	Gas	1340	Caterpillar	G3516 TALE	WPW00196	5/25/2006	2/12/2007	No	Area
ARB 3	Gas	1340	Caterpillar	G3516 TALE	WPW00708	1/30/2007	1/17/2008	No	Area

Emission Sources

Current emitting sources onsite include:

- ARB 1, ARB 2, ARB 3 Caterpillar G3516TALE compressor driver engines
- Three mixed liquids storage tanks and associated liquid tank truck loading
- · One natural gas fired line heater

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NOx) from the Caterpillar G3516 TALE engines. Additionally, each of the Caterpillar G3516 TALE engines is equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH2O).

Federally Enforceable Requirements

Kerr-McGee Consent Decree signed in 2007 required the existing engines at the Archie Bench Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. The Consent Decree also requires that any new lean-burn engines at the Archie Bench Compressor Station to be equipped with an oxidation catalyst meeting the same requirements. Therefore, the CO control requirements are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

	Uncontrolled E	missions	(TPY)		
Unit ID	Description	NOx	CO	VOC	PM10
ARB 1	G3516TALE	19.4	24.1	4.3	0.0
ARB 2	G3516TALE	19.4	24.1	4.3	0.0
ARB 3	G3516TALE	19.4	24.1	4.3	0.0
TK 1-3	Tank Emissions	-	-	8.5	-
L-1	Tank Truck Loading		-	0.3	
HTR 1	Line Heater	0.2	0.1	Insig.	_
	Total	58.4	72.3	21.6	0.0

	PTE Emiss	ions (TP	Y)		
Unit ID	Description	NOx	CO	VOC	PM10
ARB 1	G3516TALE	19.4	1.7	3.2	0.0
ARB 2	G3516TALE	19.4	1.7	3.2	0.0
ARB 3	G3516TALE	19.4	1.7	3.2	0.0
TK 1-3	Tank Emissions	-	•	8.5	-
L-1	Tank Truck Loading	-	-	0.3	-
HTR 1	Line Heater	0.2	0.1	Insig.	-
	Total	58.4	5.2	18.4	0.0

Per guidance, PTE accounts for legally and practically enforceable restrictions (emission controls).

Emission Calculations

Archie Bench Compressor Station Engine Detail Sheet

Source ID Nun	nber	ARB 1				
Source Descri	ption	4-Cycle Lean	Burn			
Engine Usage		Compressor E	Ingine			
Engine Make		Caterpillar		Potential operation	8760	hr/yr
Engine Model		G3516TALE				
Serial Number		4EK04160		Manufacture Date	8/25/2004	
Date in Service	•	4/13/2005		Potential fuel usage	96.2	MMscf/yr
Emission Cont	rols	Lean Burn			10979	scf/hr
		Oxidation Cata	alyst/AFR			
				Stack ID	ARB 1	
Engine Rating		1340	BHP	Stack Height		ft
Fuel Heating V	'alue	905.0	Btu/scf	Stack Diameter	1.0	ft
Heat Rate		9.94	MMBtu/hr	Exit Velocity	78.4	ft/s
Engine Heat R	ate	7415	Btu/hp-hr	Exit Temperature	840	deg F
				Volume Flow Rate	3,690	ft³/min

Uncontrolled Emissions

Pollutant	Emission	Factor	Estimated	Emissions	Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	_
CO	0.55	1.86	5.49	24.1	Manuf. Data	
VOC	0.10	0.33	0.97	4.3	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs						lb/yr
НСНО	0.09	0.29	0.86	3.75	Manuf. Data	7504.8
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.051	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	0.083	0.36	AP-42, Table 3.2-2	727.7
				4.36		

Pollutant	Emission			Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	4.43	19.4	Manuf. Data
CO*	0.04	0.13	0.38	1.7	Manuf. Control Data
VOC*	0.07	0.25	0.73	3.2	Manuf. Data
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2
HAPs					
HCHO*	0.02	0.07	0.21	0.90	Manuf. Control Data
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	0.083	0.36	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Archie Bench Compressor Station

Engine Detail Sheet

Source ID Number	ARB 2		
Source Description	4-Cycle Lean Burn		
Engine Usage	Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3516TALE		
Serial Number	WPW00196	Manufacture Date	5/25/2006
Date in Service	2/12/2007	Potential fuel usage	96.2 MMscf/yr
Emission Controls	Lean Burn		10979 scf/hr
	Oxidation Catalyst/AFR		
		Stack ID	ARB 2
Engine Rating	1340 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0 ft
Heat Rate	9.94 MMBtu/hr	Exit Velocity	78.4 ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840 deg F
		Volume Flow Rate	3,690 ft ³ /min

Uncontrolled Emissions

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	_
CO	0.55	1.86	5.49	24.1	Manuf. Data	
VOC	0.10	0.33	0.97	4.3	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs						lb/yr
HCHO	0.09	0.29	0.86	3.75	Manuf. Data	7504.8
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.051	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	0.083	0.36	AP-42, Table 3.2-2	727.7
				4.36		

	Emission Factor		Estimated Emissions		Source of Emission	
Pollutant			Estimated	EIIIISSIOIIS		
	(lb/MMBtu)	(g/hp-hr)	(lb/hr) (tpy)		Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	
CO*	0.04	0.13	0.38	1.7	Manuf. Control Data	
VOC*	0.07	0.25	0.73	3.2	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs						
HCHO*	0.02	0.07	0.21	0.90	Manuf. Control Data	
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2	
Acrolein	5.14E-03	0.0173	0.051	0.22	AP-42, Table 3.2-2	
Acetaldehyde	8.36E-03	0.0281	0.083	0.36	AP-42, Table 3.2-2	

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Archie Bench Compressor Station

Engine Detail Sheet

Source ID Number	ARB 3		
Source Description	4-Cycle Lean Burn		
Engine Usage	Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3516TALE	•	·
Serial Number	WPW00708	Manufacture Date	1/30/2007
Date in Service	1/17/2008	Potential fuel usage	96.2 MMscf/yr
Emission Controls	Lean Burn	-	10979 scf/hr
	Oxidation Catalyst/AFR		
•	·	Stack ID	ARB 3
Engine Rating	1340 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0 ft
Heat Rate	9.94 MMBtu/hr	Exit Velocity	78.4 ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840 deg F
		Volume Flow Rate	3,690 ft ³ /min
Uncontrolled Emissions			

Uncontrolled Emissions

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	
CO	0.55	1.86	5.49	24.1	Manuf. Data	
VOC	0.10	0.33	0.97	4.3	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs						lb/yr
НСНО	0.09	0.29	0.86	3.75	Manuf. Data	7504.8
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.051	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	0.083	0.36	AP-42, Table 3.2-2	727.7
				4.36		

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	_
CO*	0.04	0.13	0.38	1.7	Manuf. Control Data	
VOC*	0.07	0.25	0.73	3.2	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs						
HCHO*	0.02	0.07	0.21	0.90	Manuf. Control Data	1801.2
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.051	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	0.083	0.36	AP-42, Table 3.2-2	727.7

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Archie Bench Compressor Station Tank and Loading Emission Calculations

Basis

Annual Average Gas Production:

17.1 MMSCFD

Annual Average Crude Production:

BOPD

21.3

Condensate Storage Emission Estimates

Storage Tank Emission Factor*:

0.5 TPY VOC/MMSCFD

Storage Tank VOC Emissions

8.53 TPY Requested

"Emission factor derived from known production rates.

Condensate Loading Emission Estimates

Truck Loading Equation:

$$L = 12.46 \frac{\text{SPM}}{T} \quad \text{(from AP-42, section 5.2, equation 1)}$$

Calculation Variables:

L loading loss (lbs/1,000 gal)

S saturation factor

0.60 (from AP-42, Table 5.2-1, submerged loading)

P true vapor pressure of liquid loaded at bulk liquid temperature (psia)

2.60 (estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)

M molecular weight of vapor (lb/lb-mole)

50.00 (from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

L = 1.89 lbs/1,000 gal loaded

Truck Loading VOC Emissions 0.31 TPY Requested

	:
•	



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
	If you need assistance in identifying the appropriate
	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.epa.gov/region08/air/permitting/tmnsr.html	

A. GENERAL SOURCE INFORMATION

1. Company Name		2. Source Name			
Anadarko Uintah Midstream, LL	С	Bitter Creek Compressor Station			
3. Type of Operation		4. Portable Source?	Yes No V		
Natural Gas Compression		5. Temporary Source? Yes ☐ No ✓			
6. NAICS Code		7. SIC Code			
211111		1311			
8. Physical Address (home bas	se for portable sources)				
Remote Location near Ouray, U	tah				
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*		
Uinta and Ouray	Uintah	39.934358	-109.485312		
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*		
NE SW	19	10S	22E		

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address PO BOX173779, Denver, CO 80217		
Email Address		
Telephone Number	Facsimile Number	
2. Operator Name (if different from owner)		Title
Same As Owner		
Mailing Address		
Email Address	- 13 vill distallar sale Visio	
Telephone Number	Facsimile Number	
3. Source Contact		Title
Clayton Rimer		Senior Maintenance Foreman
Mailing Address		
1368 S 1200 E, Vernal, UT 84078		
Email Address		
Clayton.Rimer@anadarko.com		
Telephone Number	Facsimile Number	<u></u>
435-781-7033		
4. Compliance Contact	Title	
4. Compliance Contact Chad Schlichtemeier	Title Senior Staff EHS Repre	esentative
_		esentative
Chad Schlichtemeier		esentative
Chad Schlichtemeier Mailing Address		esentative
Chad Schlichtemeier Mailing Address PO BOX 173779, Denver, CO 80217		esentative
Chad Schlichtemeier Mailing Address PO BOX 173779, Denver, CO 80217 Email Address		esentative

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM₁₀, PM_{2.5}, sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H₂SO₄), hydrogen sulfide (H₂S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	·
PM	0	0	PM - Particulate Matter
PM ₁₀	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	39.0	39.0	NOx - Nitrogen Oxides CO - Carbon Monoxide
СО	3.5	3.5	VOC - Volatile Organic Compound
VOC	22.0	22.0	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (l) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input, and
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code</u>: North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard</u> Industrial Classification Code (http://www.osha.gov/pls/imis/sic manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. County: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
- 2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
- 3. <u>Source Contact</u>: The source contact must be the local contact authorized to receive requests for data and information.
- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. <u>Allowable Emissions (See also, Potential to Emit)</u>: Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. <u>Potential to Emit</u>: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. <u>Actual Emissions</u>: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The Bitter Creek Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. All engines were manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ and, therefore, the engines are not subject to the requirements of this subpart.

	Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	าาาา	ZZZZ
- 1	BTC 1	Gas	1340	Caterpillar	G3516 TALE	WPW00523	11/14/2006	5/17/2007	No	Area
- [BTC 2	Gas	1340	Caterpillar	G3516 TALE	WPW00201	5/30/2006	10/5/2010	No	Area

Emission Sources

Current emitting sources onsite include:

- BTC 1, BTC 2 Caterpillar G3516TALE compressor driver engines
- Two 70 MMSCFD dehydrators each with reboiler
- · Four mixed liquids storage tanks and associated liquid tank truck loading
- One natural gas fired line heater

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NOx) from the Caterpillar G3516 TALE engines. Additionally, each of the Caterpillar G3516 TALE engines is equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH2O).

Federally Enforceable Requirements

Kerr-McGee Consent Decree signed in 2007 required the existing engines at the Bitter Creek Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. The Consent Decree also requires that any new lean-burn engines at the Bitter Creek Compressor Station to be equipped with an oxidation catalyst meeting the same requirements. Therefore, the CO control requirements are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

Uncontrolled Emissions (TPY)					
Unit ID	Description	NOx	CO	VOC	PM10
BTC 1	G3516TALE	19.4	24.1	4.3	0.0
BTC 2	G3516TALE	19.4	24.1	4.3	0.0
TK 1-4	Storage Tanks	-	-	15.0	-
L-1	Tank Truck Loading	-	-	0.5	
D-1	Dehy/Reboiler	0.5	0.4	1.0	-
D-2	Dehy/Reboiler	0.5	0.4	1.0	-
HTR 1	Line Heater	0.3	0.2	Insig.	-
	Total	40.1	49.1	26.1	0.0

PTE Emissions (TPY)						
Unit ID	Description	NOx	CO	VOC	PM10	
BTC 1	G3516TALE	19.4	1.7	3.2	0.0	
BTC 2	G3516TALE	19.4	1.7	3.2	0.0	
TK 1-4	Storage Tanks	-	-	15.0		
L-1	Tank Truck Loading	-	-	0.5		
D-1	Dehy/Reboiler	0.5	0.4	1.0	-	
D-2	Dehy/Reboiler	0.5	0.4	1.0	-	
HTR 1	Line Heater	0.3	0.2	Insig.	-	
	Total	40.1	4.3	24.0	0.0	

Per guidance, PTE accounts for legally and practically enforceable restrictions (emission controls).

Emission Calculations

Bitter Creek Compressor Station Engine Detail Sheet

Source ID Number	BTC 1		
Source Description	4-Cycle Lean Burn		
Engine Usage	Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3516TALE		
Serial Number	WPW00523	Manufacture Date	11/14/2006
Date in Service	5/17/2007	Potential fuel usage	96.2 MMscf/yr
Emission Controls	Lean Burn		10979 scf/hr
	Oxidation Catalyst/AFR		
		Stack ID	BTC 1
Engine Rating	1340 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0 ft
Heat Rate	9.94 MMBtu/hr	Exit Velocity	135.8 ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840 deg F

Uncontrolled Emissions

Pollutant	Emission	Factor	Estimated	Emissions	Source of Emission Factor	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	<u> </u>	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	_
CO	0.55	1.86	5.49	24.1	Manuf. Data	
VOC	0.10	0.33	0.97	4.3	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM 10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs						lb/yr
HCHO	0.09	0.29	0.86	3.75	Manuf. Data	7504.8
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.051	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	0.083	0.36	AP-42, Table 3.2-2	727.7
				4.36		

Volume Flow Rate

6,390 ft³/min

Pollutant	Emission	Factor	Estimated	Emissions	Source of Emission Factor	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)		
NOx	0.45	1.50	4.43	19.4	Manuf. Data	
CO*	0.04	0.13	0.38	1.7	Manuf. Control Data	
VOC*	0.07	0.25	0.73	3.2	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			ı	1.51		
НСНО*	0.02	0.07	0.21	0.90	Manuf. Control Data	180
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2	38
Acrolein	5.14E-03	0.0173	0.051	0.22	AP-42, Table 3.2-2	44′
Acetaldehyde	8.36E-03	0.0281	0.083	0.36	AP-42, Table 3.2-2	72

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Bitter Creek Compressor Station

Engine Detail Sheet

Source ID Number	BTC 2		
Source Description	4-Cycle Lean Burn		
Engine Usage	Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3516TALE		
Serial Number	WPW00201	Manufacture Date	5/30/2006
Date in Service	10/5/2010	Potential fuel usage	96.2 MMscf/yr
Emission Controls	Lean Burn		10979 scf/hr
	Oxidation Catalyst/AFR		
		Stack ID	BTC 2
Engine Rating	1340 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0 ft
Heat Rate	9.94 MMBtu/hr	Exit Velocity	135.8 ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840 deg F

Uncontrolled Emissions

Pollutant	Emission	Factor	Estimated	Emissions	Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	
CO	0.55	1.86	5.49	24.1	Manuf. Data	
VOC	0.10	0.33	0.97	4.3	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs						lb/yr
HCHO	0.09	0.29	0.86	3.75	Manuf. Data	7504.8
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.051	0.22	AP-42, Table 3.2-2	447.4
A cetaldehy de	8.36E-03	0.0281	0.083	0.36	AP-42, Table 3.2-2	727.7
•				4.36		

Volume Flow Rate

6,390 ft³/min

Pollutant	Emission	Factor	Estimated	Emissions	Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	
CO*	0.04	0.13	0.38	1.7	Manuf. Control Data	
VOC*	0.07	0.25	0.73	3.2	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			'	1.51		
HCHO*	0.02	0.07	0.21	0.90	Manuf. Control Data	1801.2
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.051	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	0.083	0.36	AP-42, Table 3.2-2	727.

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Basis

Annual Average Gas Production:

30.0 **MMSCFD**

Annual Average Crude Production:

37.5 BOPD

Condensate Storage Emission Estimates

Storage Tank Emission Factor*:

TPY VOC/MMSCFD

Uncontrolled Storage Tank VOC Emissions: 15.01 TPY

"Emis sion factor derived from known production rates.

Condensate Loading Emission Estimates

Truck Loading Equation:

L =
$$12.46 \frac{\text{SPM}}{\text{T}}$$
 (from AP-42, section 5.2, equation 1)

Calculation Variables:

L loading loss (lbs/1,000 gal)

S saturation factor

(from AP-42, Table 5.2-1, submerged loading) 0.60

P true vapor pressure of liquid loaded at bulk liquid temperature (psia)

(estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)

M molecular weight of vapor (lb/lb-mole)

(from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

(55 °F) 514.67

> lbs/1,000 gal loaded L 1.89

TPY Requested Truck Loading VOC Emissions 0.54



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriate
	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.epa.gov/region08/air/permitting/tmnsr.html	

A. GENERAL SOURCE INFORMATION

A. GENERAL SOURCE INFORMATION				
1. Company Name		2. Source Name		
Anadarko Uintah Midstream, LL	С	Blue Feather Compressor	Station	
3. Type of Operation		4. Portable Source?	Yes No 🗸	
3. Type of Operation		5. Temporary Source?	Yes No ✓	
Natural Gas Compression		5. Temporary Source:	Tes NO V	
6. NAICS Code		7. SIC Code		
0. 11.1105 C020		510 0000		
211111		1311		
8. Physical Address (home bas	se for portable sources)			
Remote Location near Ouray, U	-			
riomete zoodilem nedi edilay, e				
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*	
Uinta and Ouray	Uintah	40.037373	-109.516031	
J				
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*	
SW NE	14	9S	21E	
	17	~~	- -	

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address PO BOX173779, Denver, CO 80217		
Email Address		
Telephone Number	Facsimile Number	
2. Operator Name (if different from owner)		Title
Same As Owner		
Mailing Address		
Email Address		
T-ll N	E::1- NI1	
Telephone Number	Facsimile Number	
3. Source Contact	-	Title
3. Source Contact] -	i iue
Clayton Rimer		Senior Maintenance Foreman
Clayton Rimer		
Clayton Rimer Mailing Address		
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078		
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address		
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com	S	
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number	S	
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033	Facsimile Number	Senior Maintenance Foreman
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact	Facsimile Number Title	Senior Maintenance Foreman
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier	Facsimile Number Title	Senior Maintenance Foreman
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier Mailing Address	Facsimile Number Title	Senior Maintenance Foreman
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier Mailing Address PO BOX 173779, Denver, CO 80217	Facsimile Number Title	Senior Maintenance Foreman
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier Mailing Address PO BOX 173779, Denver, CO 80217 Email Address	Facsimile Number Title	Senior Maintenance Foreman

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM₁₀, PM_{2.5}, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H₂SO₄), hydrogen sulfide (H₂S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM₁₀, PM_{2.5}, sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H₂SO₄), hydrogen sulfide (H₂S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM ₁₀	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	74.4	74.4	NOx - Nitrogen Oxides
CO	9.3	9.3	CO - Carbon Monoxide VOC - Volatile Organic Compound
VOC	34.2	34.2	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (l) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input, and
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code</u>: North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard</u> Industrial Classification Code (http://www.osha.gov/pls/imis/sic_manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. <u>County</u>: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
- 2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
- 3. <u>Source Contact</u>: The source contact must be the local contact authorized to receive requests for data and information.
- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. <u>Allowable Emissions (See also, Potential to Emit)</u>: Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. <u>Potential to Emit</u>: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. Actual Emissions: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The Blue Feather Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. All engines except the Caterpillar G3608 TALE were manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ; therefore, the Caterpillar G3608 TALE engine will be the only facility engine subject to the requirements of Subpart JJJJ.

Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	JJJJ	ZZZZ
BLF 1	Gas	1151	Caterpillar	G3516 TALE	WPT00225	4/15/2008	3/18/2009	No	Area
BLF 2	Gas	1151	Caterpillar	G3516 TALE	WPT00226	4/15/2008	3/17/2009	No	Area
BLF 3	Gas	1151	Caterpillar	G3516 TALE	WPT00233	4/15/2008	3/16/2009	No	Агеа
BLF 4	Gas	2370	Caterpillar	G3608 TALE	BEN00622	8/31/2009	5/17/2010	Yes	Area
BLF 5	Gas	425	Caterpillar	3408 CLE	KRB00100	unknown	3/12/2009	No	Area

Emission Sources

Current emitting sources onsite include:

- BFL 1, BFL 2, BFL 3 Caterpillar G3516TALE compressor driver engines
- BFL 4 Caterpillar G3608TALE compressor driver engine
- BFL 5 Caterpillar 3408CLE power generator
- Three mixed liquids storage tanks and associated liquid tank truck loading
- One natural gas fired line heater

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NOx) from the Caterpillar G3516 TALE, Caterpillar G3608TALE, and the Caterpillar 3408CLE engines. Additionally, each of the engines is equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH2O).

Federally Enforceable Requirements

Kerr-McGee Consent Decree signed in 2007 required the existing engines at the Blue Feather Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. The Consent Decree also requires that any new lean-burn engines at the Blue Feather Compressor Station to be equipped with an oxidation catalyst meeting the same requirements. Therefore, the CO control requirements are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

	Uncontrolled En	nissions (T	PY)		
Unit ID	Description	NOx	СО	VOC	PM10
BLF 1	G3516TALE	16.7	20.0	3.7	0.0
BLF 2	G3516TALE	16.7	20.0	3.7	0.0
BLF 3	G3516TALE	16.7	20.0	3.7	0.0
BLF 4	G3608TALE	16.0	62.9	14.4	0.0
BLF 5	3408CLE	8.2	6.6	1.4	0.0
TK 1-3	Tank Emissions	-	-	13.5	-
L-1	Tank Truck Loading	-	-	0.5	-
HTR 1	Line Heater	0.2	0.1	Insig.	-
	Total	74.4	129.7	40.8	0.0

	PTE Emissi	ons (TPY)			
Unit ID	Description	NOx	CO	VOC	PM10
BLF 1	G3516TALE	16.7	1.4	2.8	0.0
BLF 2	G3516TALE	16.7	1.4	2.8	0.0
BLF 3	G3516TALE	16.7	1.4	2.8	0.0
BLF 4	G3608TALE	16.0	4.4	10.8	0.0
BLF 5	3408CLE	8.2	0.5	1.0	0.0
TK 1-3	Tank Emissions	-	-	13.5	-
L-l	Tank Truck Loading	-	-	0.5	-
HTR 1	Line Heater	0.2	0.1	Insig.	
	Total	74.4	9.3	34.2	0.0

Per guidance, PTE accounts for legally and practically enforceable restrictions (emission controls).

Emission Calculations

Blue Feather Compressor Station

Engine Detail Sheet

Source ID Numbe	r
-----------------	---

BLF 1

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3516TALE

Manufacture Date

4/15/2008

Serial Number Date in Service WPT00225 3/18/2009

Potential fuel usage

82.6 MMscf/yr

Emission Controls

Lean Burn

9431 scf/hr

Oxidation Catalyst/AFR

Stack ID

BLF₁

Engine Rating Fuel Heating Value

1151 BHP 905.0 Btu/scf Stack Height Stack Diameter Exit Velocity

ft 1.0 ft 135.8 ft/s

Heat Rate Engine Heat Rate

8.53 MMBtu/hr 7415 Btu/hp-hr

Exit Temperature

840 deg F

Volume Flow Rate

6,390 ft³/min

Uncontrolled Emissions

Pollutant	Emission Factor		Estimated	Emissions	Source of Emission Factor]
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	ractor	J
NOx	0.45	1.50	3.81	16.7	Manuf. Data	_
CO	0.54	1.80	4.57	20.0	Manuf. Data	
VOC	0.10	0.33	0.84	3.7	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.02	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs						lb/yr
HCHO	0.07	0.25	0.63	2.78	Manuf. Data	5557.2
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2	32.9
Acrolein	5.14E-03	0.0173	0.044	0.19	AP-42, Table 3.2-2	384.3
Acetaldehyde	8.36E-03	0.0281	0.071	0.31	AP-42, Table 3.2-2	625.0
				3.30		

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	3.81	16.7	Manuf. Data	_
CO*	0.04	0.13	0.33	1.4	Manuf. Control Data	
VOC*	0.07	0.25	0.63	2.8	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.02	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs				1.19		
HCHO*	0.02	0.06	0.15	0.67	Manuf. Control Data	133
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2	32
Acrolein	5.14E-03	0.0173	0.044	0.19	AP-42, Table 3.2-2	38
Acetaldehyde	8.36E-03	0.0281	0.071	0.31	AP-42, Table 3.2-2	62:

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Blue Feather Compressor Station

Engine Detail Sheet

Source ID Number	BLF 2		
Source Description	4-Cycle Lean Burn		
Engine Usage	Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3516TALE		
Serial Number	WPT00226	Manufacture Date	4/15/2008
Date in Service	3/17/2009	Potential fuel usage	82.6 MMscf/yr
Emission Controls	Lean Burn		9431 scf/hr
	Oxidation Catalyst/AFR		
		Stack ID	BLF2
Engine Rating	1151 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0 ft
Heat Rate	8.53 MMBtu/hr	Exit Velocity	135.8 ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840 deg F
-		Volume Flow Rate	6,390 ft ³ /min

Uncontrolled Emissions

Pollutant	Emission Factor		Estimated	Estimated Emissions Source of Emission		
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	3.81	16.7	Manuf. Data	_
CO	0.54	1.80	4.57	20.0	Manuf. Data	
VOC	0.10	0.33	0.84	3.7	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.02	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs						lb/yr
НСНО	0.07	0.25	0.63	2.78	Manuf. Data	5557.2
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2	32.9
Acrolein	5.14E-03	0.0173	0.044	0.19	AP-42, Table 3.2-2	384.3
Acetaldehyde	8.36E-03	0.0281	0.071	0.31	AP-42, Table 3.2-2	625.0
·				3.30		

Pollutant	Emission Factor		Estimated Emissions		Source of Emission Factor	:
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	ractor	
NOx	0.45	1.50	3.81	16.7	Manuf. Data	-
CO*	0.04	0.13	0.33	1.4	Manuf. Control Data	
VOC*	0.07	0.25	0.63	2.8	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.02	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			I	1.19		
HCHO*	0.02	0.06	0.15	0.67	Manuf. Control Data	1333.7
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2	32.9
Acrolein	5.14E-03	0.0173	0.044	0.19	AP-42, Table 3.2-2	384.3
Acetaldehyde	8.36E-03	0.0281	0.071	0.31	AP-42, Table 3.2-2	625.0

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Blue Feather Compressor Station Engine Detail Sheet

Source ID Number	BLF3
Source Description	4 Cirolo

Source Description 4-Cycle Lean Burn Engine Usage Compressor Engine

Engine Make Caterpillar Potential operation 8760 hr/yr
Engine Model G3516TALE

Serial Number WPT00233 Manufacture Date 4/15/2008

Date in Service 3/16/2009 Potential fuel usage 82.6 MMscf/yr Emission Controls Lean Burn 9431 scf/hr

Oxidation Catalyst/AFR

Stack ID BLF 3

Engine Rating ft 1151 BHP Stack Height Fuel Heating Value 905.0 Btu/scf Stack Diameter 1.0 ft Heat Rate 8.53 MMBtu/hr Exit Velocity 135.8 ft/s Engine Heat Rate 7415 Btu/hp-hr Exit Temperature 840 deg F Volume Flow Rate 6,390 ft³/min

Uncontrolled Emissions

Pollutant	Emission	Factor	ctor Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	3.81	16.7	Manuf. Data	
CO	0.54	1.80	4.57	20.0	Manuf. Data	
VOC	0.10	0.33	0.84	3.7	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.02	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs						lb/yr
HCHO	0.07	0.25	0.63	2.78	Manuf. Data	5557.2
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2	32.9
Acrolein	5.14E-03	0.0173	0.044	0.19	AP-42, Table 3.2-2	384.3
Acetaldehyde	8.36E-03	0.0281	0.071	0.31	AP-42, Table 3.2-2	625.0
				3.30		

					<u> </u>
Pollutant	Emission Factor		Estimated	Emissions	Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	3.81	16.7	Manuf. Data
CO*	0.04	0.13	0.33	1.4	Manuf. Control Data
VOC*	0.07	0.25	0.63	2.8	Manuf. Data
SOx	5.88E-04	0.002	0.01	0.02	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2
HAPs				1.19	
НСНО*	0.02	0.06	0.15	0.67	Manuf. Control Data
Benzene	4.40E-04	0.0015	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	0.044	0.19	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	0.071	0.31	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Blue Feather Compressor Station Engine Detail Sheet

_	-	
Source	IID.	Number

BLF4

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine

Engine Make

Caterpillar G3608TALE Potential operation

8760 hr/yr

Engine Model

BEN00622 Serial Number

Manufacture Date

8/31/2009

Date in Service **Emission Controls** 5/17/2010

Potential fuel usage

155.8 MMscf/yr 17784 scf/hr

Lean Burn Oxidation Catalyst/AFR

Stack ID

BLF 4

Engine Rating Fuel Heating Value

2370 BHP 905.0 Btu/scf Stack Height Stack Diameter Exit Velocity

ft 1.8 ft 110.7 ft/s

Heat Rate Engine Heat Rate 16.09 MMBtu/hr 6791 Btu/hp-hr

Exit Temperature Volume Flow Rate

878 deg F 15,953 ft³/min

Uncontrolled Emissions

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.23	0.70	3.66	16.0	Manuf. Data	
CO	0.89	2.75	14.37	62.9	Manuf. Data	
VOC	0.20	0.63	3.29	14.4	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.04	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0002	0.00	0.01	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0002	0.00	0.01	AP-42, Table 3.2-2	
HAPs						lb/yr
HCHO	0.08	0.26	1.36	5.95	Manuf. Data	11900.4
Benzene	4.40E-04	0.0014	0.007	0.03	AP-42, Table 3.2-2	62.0
Acrolein	5.14E-03	0.0158	0.083	0.36	AP-42, Table 3.2-2	724.7
Acetaldehyde	8.36E-03	0.0258	0.135	0.59	AP-42, Table 3.2-2	1178.7
				6.93		

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.23	0.70	3.66	16.0	Manuf. Data	_
CO*	0.06	0.19	1.01	4.4	Manuf. Control Data	
VOC*	0.15	0.47	2.47	10.8	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.04	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0002	0.00	0.01	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0002	0.00	0.01	AP-42, Table 3.2-2	
HAPs				2.41		
HCHO*	0.02	0.06	0.33	1.43	Manuf. Control Data	2856
Benzene	4.40E-04	0.0014	0.007	0.03	AP-42, Table 3.2-2	62
Acrolein	5.14E-03	0.0158	0.083	0.36	AP-42, Table 3.2-2	724
Acetaldehyde	8.36E-03	0.0258	0.135	0.59	AP-42, Table 3.2-2	1178

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Blue Feather Compressor Station Engine Detail Sheet

Source	Ш	Number
DOULCE	\mathbf{L}	INUITION

BLF 5

Source Description

4-Cycle Lean Burn

Engine Usage

Generator

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

3408CLE

Manufacture Date

Serial Number

KRB00100

unknown

Date in Service

3/12/2009

Potential fuel usage

31.8 MMscf/yr 3636 scf/hr

Stack ID

Emission Controls Lean Burn Oxidation Catalyst/AFR

BLF5

Engine Rating Fuel Heating Value

425 BHP 905.0 Btu/scf

Stack Height Stack Diameter Exit Velocity

ft 1.0 ft 49.8 ft/s

Heat Rate Engine Heat Rate

3.29 MMBtu/hr 7742 Btu/hp-hr

Exit Temperature Volume Flow Rate

806 deg F 2,344 ft³/min

Uncontrolled Emissions

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.57	2.00	1.87	8.2	Manuf. Data	
CO	0.46	1.62	1.52	6.6	Manuf. Data	
VOC	0.10	0.34	0.32	1.4	Manuf. Data	
SOx	5.88E-04	0.002	0.00	0.01	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs						lb/yr
HCHO	0.08	0.28	0.26	1.15	Manuf. Data	2298.2
Benzene	4.40E-04	0.0015	0.001	0.01	AP-42, Table 3.2-2	12.3
Acrolein	5.14E-03	0.0181	0.017	0.07	AP-42, Table 3.2-2	148.2
Acetaldehyde	8.36E-03	0.0294	0.028	0.12	AP-42, Table 3.2-2	241.0
				1.35		

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.57	2.00	1.87	8.2	Manuf. Data	_
CO*	0.03	0.11	0.11	0.5	Manuf. Control Data	
VOC*	0.07	0.26	0.24	1.0	Manuf. Data	
SOx	5.88E-04	0.002	0.00	0.01	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs				0.48		
HCHO*	0.02	0.07	0.06	0.28	Manuf. Control Data	551.6
Benzene	4.40E-04	0.0015	0.001	0.01	AP-42, Table 3.2-2	12.7
Acrolein	5.14E-03	0.0181	0.017	0.07	AP-42, Table 3.2-2	148.2
Acetaldehyde	8.36E-03	0.0294	0.028	0.12	AP-42, Table 3.2-2	241.0

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Blue Feather Compressor Station Tank and Loading Emission Calculations

Basis

Annual Average Gas Production: 27.0

MMSCFD

Annual Average Crude Production:

33.8 **BOPD**

Condens ate Storage Emission Estimates

Storage Tank Emission Factor*:

0.5 TPY VOC/MMSCFD

Storage Tank VOC Emissions 13.52 TPY Requested

"Emission factor derived from known production rates.

Condensate Loading Emission Estimates

Truck Loading Equation:

$$L = 12.46 \frac{\text{SPM}}{T}$$
 (from AP-42, section 5.2, equation 1)

Calculation Variables:

L loading loss (lbs/1,000 gal)

S saturation factor

0.60 (from AP-42, Table 5.2-1, submerged loading)

P true vapor pressure of liquid loaded at bulk liquid temperature (psia)

(estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)

M molecular weight of vapor (lb/lb-mole)

(from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

> L lbs/1,000 gal loaded 1.89

Truck Loading VOC Emissions TPY Requested 0.49

OMB Control No. 2060-0003 Approval expires 04/30/2012



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriate
	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.epa.gov/region08/air/permitting/tmnsr.html	

A. GENERAL SOURCE INFORMATION

A. GENERAL SOURCE INFORMATION						
1. Company Name		2. Source Name				
Anadarko Uintah Midstream, LL	С	Bonanza East Compressor Station				
3. Type of Operation		4. Portable Source?	Yes No 🗸			
Natural Gas Compression		5. Temporary Source?	Yes No 🗸			
6. NAICS Code		7. SIC Code				
211111		1311				
8. Physical Address (home bas	se for portable sources)					
Remote Location near Ouray, U	tah					
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*			
Uinta and Ouray	Uintah	39.970217	-109.289021			
·						
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*			
NE NE	11	108	23E			
i						

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address PO BOX173779, Denver, CO 80217		
Email Address		
Telephone Number	Facsimile Number	
2. Operator Name (if different from owner)		Title
Same As Owner		
Mailing Address	·	
Email Address		
Telephone Number	Facsimile Number	
3. Source Contact		Title
Clayton Rimer		Senior Maintenance Foreman
Mailing Address	·	
1368 S 1200 E, Vernal, UT 84078		
Email Address		
Clayton.Rimer@anadarko.com		
Telephone Number	Facsimile Number	
435-781-7033		
4. Compliance Contact	Title	*****
Chad Schlichtemeier	Senior Staff EHS Repre	esentative
Mailing Address		
PO BOX 173779, Denver, CO 80217		
Email Address		
Chad.Schlichtemeier@anadarko.com		
Telephone Number	Facsimile Number	
720-929-6867	720-929-7105	

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SO_x) , nitrogen oxides (NO_x) , carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4) , hydrogen sulfide (H_2S) , total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM_{10}	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	· N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	58.5	58.5	NOx - Nitrogen Oxides
CO	5.2	5.2	CO - Carbon Monoxide VOC - Volatile Organic Compound
VOC	21.6	21.6	Pb - Lead and lead compounds - Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A]
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (l) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input, and
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code</u>: North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard Industrial Classification Code</u> (http://www.osha.gov/pls/imis/sic_manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. <u>County</u>: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
- 2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
- 3. <u>Source Contact</u>: The source contact must be the local contact authorized to receive requests for data and information.
- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. <u>Allowable Emissions (See also, Potential to Emit)</u>: Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. <u>Potential to Emit</u>: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. Actual Emissions: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The Bonanza East Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression and a dehydration unit before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. All engines were manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ and, therefore, the engines are not subject to the requirements of this subpart.

Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	JJJJ	ZZZZ
BZE 1	Gas	1340	Caterpillar	G3516 TALE	4EK04389	2/1/2005	10/14/2005	No	Area
BZE 2	Gas	1340	Caterpillar	G3516 TALE	4EK04986	3/9/2006	5/17/2007	No	Area
BZE 3	Gas	1340	Caterpillar	G3516 TALE	WPW01576	8/14/2007	6/23/2008	No	Area

Emission Sources

Current emitting sources onsite include:

- BZE 1, BZE 2, BZE 3 Caterpillar G3516TALE compressor driver engines
- Three mixed liquids storage tanks and associated liquid tank truck loading
- One natural gas fired line heater

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NOx) from the Caterpillar G3516 TALE, engines. Additionally, each of the engines is equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH2O).

Federally Enforceable Requirements

Kerr-McGee Consent Decree signed in 2007 required the existing engines at the Bonanza East Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. The Consent Decree also requires that any new lean-burn engines at the Bonanza East Compressor Station to be equipped with an oxidation catalyst meeting the same requirements. Therefore, the CO control requirements are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

	Uncontrolled Emissions								
Unit ID	Description	NOx	CO	VOC	PM ₁₀				
BZE 1	G3516TALE	19.4	24.1	4.3	0.0				
BZE 2	G3516TALE	19.4	24.1	4.3	0.0				
BZE 3	G3516TALE	19.4	24.1	4.3	0.0				
TK1-3	Tank Emissions	0.0	0.0	11.5	0.0				
L1	Tank Truck Loading	0.0	0.0	0.4	0.0				
HTR-1	Heater	0.3	0.2	Insig.					
	Total	58.5	72.4	24.8	0.0				

	PTE Emissions (TPY)								
Unit ID	Description	NOx	CO	VOC	PM10				
BZE 1	G3516TALE	19.4	1.7	3.2	0.0				
BZE 2	G3516TALE	19.4	1.7	3.2	0.0				
BZE 3	G3516TALE	19.4	1.7	3.2	0.0				
TK1-3	Tank Emissions	0.0	0.0	11.5	0.0				
L1	Tank Truck Loading	0.0	0.0	0.4	0.0				
HTR-1	Heater	0.3	0.2	Insig.	-				
	Total		5.2	21.6	0.0				

Bonanza East Compressor Station.

Engine Detail Sheet

		Victoria (Constantino	
Source ID Number	BZE 1		
Source Description	4-Cycle Lean Burn		
Engine Usage	Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3516TALE	_	·
Serial Number	4EK04389	Manufacture Date	2/1/2005
Date in Service	10/14/2005	Potential fuel usage	96.2 MMscf/yr
Emission Controls	Lean Burn		10979 scf/hr
	Oxidation Catalyst/AFR		
		Stack ID	BZE 1
Engine Rating	1340 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0 ft
Heat Rate	9.94 MMBtu/hr	Exit Velocity	135.8 ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840 deg F

Uncontrolled Emissions

Dollytest	Emission Factor Estimated Emissions Source of Emission					
Pollutant	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	_
CO	0.55	1.86	5.49	24.1	Manuf. Data	
VOC	0.10	0.33	0.97	4.3	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.88	3.84		lb/yr
НСНО	0.07	0.25	0.74	3.23	Manuf. Data	6469.7
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447.4
Acetal dehyde	8.36E-03	0.0281	0.08	0.36	AP-42, Table 3.2-2	727.7

Volume Flow Rate

6,390 ft³/min

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	
CO*	0.04	0.13	0.38	1.7	Manuf. Control Data	
VOC*	0.07	0.25	0.73	3.2	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.32	1.38		lb/yr
HCHO*	0.02	0.06	0.18	0.78	Manuf. Control Data	1552.
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	0.08	0.36	AP-42, Table 3.2-2	727.

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Bonnie Bris Compressor Staffon

Engine Detail Sheet

Source ID Number	BZE 2		
Source Description	4-Cycle Lean Burn		
Engine Usage	Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3516TALE		
Serial Number	4EK04386	Manufacture Date	3/9/2006
Date in Service	5/17/2007	Potential fuel usage	96.2 MMscf/yr
Emission Controls	Lean Burn		10979 scf/hr
	Oxidation Catalyst/AFR		
		Stack ID	BZE 2
Engine Rating	1340 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0 ft
Heat Rate	9.94 MMBtu/hr	Exit Velocity	135.8 ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840 deg F
		Volume Flow Rate	6,390 ft ³ /min

Uncontrolled Emissions

Oncontrolled	Еш12210П2					
Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	
CO	0.55	1.86	5.49	24.1	Manuf. Data	
VOC	0.10	0.33	0.97	4.3	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.88	3.84		lb/yr
HCHO	0.07	0.25	0.74	3.23	Manuf. Data	6469.7
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	0.08	0.36	AP-42, Table 3.2-2	727.7

I IE Emissio	П2					_
Pollutant	Emission Factor		Estimated	Emissions	Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	
CO*	0.04	0.13	0.38	1.7	Manuf. Control Data	
VOC*	0.07	0.25	0.73	3.2	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.32	1.38		lb/yr
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Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	0.08	0.36	AP-42, Table 3.2-2	727.7

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Bonnia Brit Compressor Station

Engine Detail Sheet

Source ID Number	BZE 3		
Source Description	4-Cycle Lean Burn		
Engine Usage	Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3516TALE		
Serial Number	WPW01576	Manufacture Date	8/14/2007
Date in Service	6/23/2008	Potential fuel usage	96.2 MMscf/yr
Emission Controls	Lean Burn		10979 scf/hr
	Oxidation Catalyst/AFR		
		Stack ID	BZE 3
Engine Rating	1340 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0 ft
Heat Rate	9.94 MMBtu/hr	Exit Velocity	135.8 ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840 deg F
		Volume Flow Rate	6,390 ft ³ /min

Uncontrolled Emissions

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
L	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	_
CO	0.55	1.86	5.49	24.1	Manuf. Data	
VOC	0.10	0.33	0.97	4.3	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.88	3.84		lb/yr
HCHO	0.07	0.25	0.74	3.23	Manuf. Data	6469.7
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Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447.4
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Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	
CO*	0.04	0.13	0.38	1.7	Manuf. Control Data	
VOC*	0.07	0.25	0.73	3.2	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.32	1.38		lb/yr
НСНО*	0.02	0.06	0.18	0.78	Manuf. Control Data	1552
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	38
Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447
Acetaldehyde	8.36E-03	0.0281	0.08	0.36	AP-42, Table 3.2-2	727

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Bonanza East Compressor Station Tank and Loading Emission Calculations

Basis

Annual Average Gas Production:

23.1 MMSCFD

Annual Average Crude Production:

28.9 BOPD

Condensate Storage Emission Estimates

Storage Tank Emission Factor*:

0.5 TPY VOC/MMSCFD

Storage Tank VOC Emissions

11.54

TPY Requested

*Emission factor derived from known production rates.

Condensate Loading Emission Estimates

Truck Loading Equation:

$$L = 12.46 \frac{SPM}{T}$$
 (from AP-42, section 5.2, equation 1)

Calculation Variables:

L loading loss (lbs/1,000 gal)

S saturation factor

0.60 (from AP-42, Table 5.2-1, submerged loading)

P true vapor pressure of liquid loaded at bulk liquid temperature (psia)

2.60 (estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)

M molecular weight of vapor (lb/lb-mole)

50.00 (from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

L = 1.89 lbs/1,000 gal loaded

Truck Loading VOC Emissions 0.42 TPY Requested

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriate
	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.epa.gov/region08/air/permitting/tmnsr.html	

A. GENERAL SOURCE INFORMATION

A. GENERAL BOUNCE IN CHAMITON							
1. Company Name		2. Source Name					
Anadarko Uintah Midstream, LL	С	Bonanza West Compresso	Station				
3. Type of Operation		4. Portable Source?	Yes No 🗸				
Natural Gas Compression		5. Temporary Source?	Yes No 🗸				
6. NAICS Code		7. SIC Code					
211111		1311					
8. Physical Address (home bas	se for portable sources)	•					
Remote Location near Ouray, U	tah						
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*				
Uinta and Ouray	Uintah	39.966062	-109.370739				
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*				
SE NW	7	10S	23E				
]						

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address PO BOX173779, Denver, CO 80217		
Email Address		
Telephone Number	Facsimile Number	
2. Operator Name (if different from owner)		Title
Same As Owner		
Mailing Address		
Email Address		
Telephone Number	Facsimile Number	
3. Source Contact		Title
Clayton Rimer		Senior Maintenance Foreman
Mailing Address		
1368 S 1200 E, Vernal, UT 84078		•
Email Address		
Clayton.Rimer@anadarko.com		
Telephone Number	Facsimile Number	
435-781-7033		
4. Compliance Contact	Title	
Chad Schlichtemeier	Senior Staff EHS Repre	esentative
Mailing Address	1	
PO BOX 173779, Denver, CO 80217		
Email Address		address address 1 · · · · · ·
Chad.Schlichtemeier@anadarko.com		
Telephone Number	Facsimile Number	
720-929-6867	720-929-7105	

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compound (VOC), lead (PO) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (PO), hydrogen sulfide (PO), total reduced sulfur (PO) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM ₁₀	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	39.3	39.3	NOx - Nitrogen Oxides
СО	3.6	3.6	CO - Carbon Monoxide VOC - Volatile Organic Compound
VOC	16.1	16.1	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (1) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input, and
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code</u>: North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard</u> Industrial Classification Code (http://www.osha.gov/pls/imis/sic_manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. County: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
- 2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
- 3. <u>Source Contact</u>: The source contact must be the local contact authorized to receive requests for data and information.
- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. <u>Allowable Emissions (See also, Potential to Emit)</u>: Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. <u>Potential to Emit</u>: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. Actual Emissions: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The Bonanza West Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression and a dehydration unit before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. All engines were manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ and, therefore, the engines are not subject to the requirements of this subpart.

Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	JJJJ	ZZZZ
BZW 1	Gas	1340	Caterpillar	G3516 TALE	4EK04236	10/4/2004	5/1/2005	No	Area
BZW 2	Gas	1340	Caterpillar	G3516 TALE	WPW00367	8/21/2006	7/25/2007	No	Area

Emission Sources

Current emitting sources onsite include:

- BZW 1, BZW 2- Caterpillar G3516TALE compressor driver engines
- Three mixed liquids storage tanks and associated liquid tank truck loading
- Two natural gas fired line heaters

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NOx) from the Caterpillar G3516 TALE, engines. Additionally, each of the engines is equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH2O).

Federally Enforceable Requirements

Kerr-McGee Consent Decree signed in 2007 required the existing engines at the Bonanza West Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. The Consent Decree also requires that any new lean-burn engines at the Bonanza West Compressor Station to be equipped with an oxidation catalyst meeting the same requirements. Therefore, the CO control requirements are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

	Uncontrolled Emissions (TPY)								
Unit ID	Description	NOx	CO	VOC	PM ₁₀				
BZW 1	G3516TALE	19.4	23.3	4.3	0.0				
BZW 2	G3516TALE	19.4	23.3	4.3	0.0				
HTR-1	Heater	0.2	0.2	Insig.	0.0				
HTR-2	Heater 2	0.2	0.2	Insig.	0.0				
TK1-3	Storage Tanks	-	-	9.4	-				
L1	Loading		-	0.3	-				
	Total	39.3	46.9	18.3	0.0				

	PTE Emissions (TPY)							
Unit ID	Description	NOx	CO	VOC	PM10			
BZW 1	G3516TALE	19.4	1.6	3.2	0.0			
BZW 2	G3516TALE	19.4	1.6	3.2	0.0			
HTR-1	Heater	0.2	0.2	Insig.	-			
HTR-2	Heater 2	0.2	0.2	Insig.	-			
TK1-3	Storage Tanks	-	-	9.4	-			
L1	Loading	-	-	0.3	-			
	Total	39.3	3.6	16.1	0.0			

Bonanza West Compressor Station

Engine Detail Sheet

Source ID Number	BZW 1		
Source Description	4-Cycle Lean Burn		
Engine Usage	Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3516TALE	1 0 10 11 11 11 11 11 11 11 11 11 11 11	
Serial Number	4EK04236	Manufacture Date	10/4/2004
Date in Service	5/1/2005	Potential fuel usage	96.2 MMscf/yr
Emission Controls	Lean Burn	· ·	10979 scf/hr
	Oxidation Catalyst/AFR		
	·	Stack ID	BZW 1
Engine Rating	1340 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0 ft
Heat Rate	9.94 MMBtu/hr	Exit Velocity	135.8 ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840 deg F
		Volume Flow Rate	6,390 ft ³ /min

Uncontrolled Emissions

THE RESERVE OF THE PARTY OF THE						
Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	p-hr) (lb/hr) (tpy) Factor	Factor		
NOx	0.45	1.50	4.43	19.4	Manuf. Data	-
CO	0.54	1.80	5.32	23.3	Manuf. Data	
VOC	0.10	0.33	0.97	4.3	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.88	3.84		lb/yr
HCHO	0.07	0.25	0.74	3.23	Manuf. Data	6469.7
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	80.0	0.36	AP-42, Table 3.2-2	727.7

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	
CO*	0.04	0.13	0.37	1.6	Manuf. Control Data	
VOC*	0.07	0.25	0.73	3.2	Manuf. Control Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.32	1.38		1b/
HCHO*	0.02	0.06	0.18	0.78	Manuf. Control Data	1552
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	38
Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447
Acetaldehyde	8.36E-03	0.0281	0.08	0.36	AP-42, Table 3.2-2	727

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Bonanza West Compressor Station

Engine Detail Sheet

Source ID Number	BZW 2		
Source Description	4-Cycle Lean Burn		
Engine Usage	Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3516TALE		
Serial Number	WPW00367	Manufacture Date	8/21/2006
Date in Service	7/25/2007	Potential fuel usage	96.2 MMscf/yr
Emission Controls	Lean Burn		10979 scf/hr
	Oxidation Catalyst/AFR		
		Stack ID	BZW 2
Engine Rating	1340 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0 ft
Heat Rate	9.94 MMBtu/hr	Exit Velocity	135.8 ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840 deg F
-	-	Volume Flow Rate	6,390 ft ³ /min

Uncontrolled Emissions

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	•
CO	0.54	1.80	5.32	23.3	Manuf. Data	
VOC	0.10	0.33	0.97	4.3	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.88	3.84		lb/yr
HCHO	0.07	0.25	0.74	3.23	Manuf. Data	6469.7
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	0.08	0.36	AP-42, Table 3.2-2	727.7

F 1E Emissions						
Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	-
CO*	0.04	0.13	0.37	1.6	Manuf. Control Data	
VOC*	0.07	0.25	0.73	3.2	Manuf. Control Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.32	1.38		lb/yr
НСНО*	0.02	0.06	0.18	0.78	Manuf. Control Data	1552.7
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	0.08	0.36	AP-42, Table 3.2-2	727.7

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Basis

Annual Average Gas Production: 18.8

Annual Average Crude Production: 23.5 BOPD

Condensate Storage Emission Estimates

Storage Tank Emission Factor*: 0.5 TPY VOC/MMSCFD

MMSCFD

Storage Tank VOC Emissions 9.38 TPY Requested

*Emission factor derived from known production rates.

Condensate Loading Emission Estimates

Truck Loading Equation:

$$L = 12.46 \frac{SPM}{T}$$
 (from AP-42, section 5.2, equation 1)

Calculation Variables:

L loading loss (lbs/1,000 gal)

S saturation factor

0.60 (from AP-42, Table 5.2-1, submerged loading)

P true vapor pressure of liquid loaded at bulk liquid temperature (psia)

2.60 (estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)

M molecular weight of vapor (lb/lb-mole)

50.00 (from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

L = 1.89 lbs/1,000 gal loaded

Truck Loading VOC Emissions 0.34 TPY Requested



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriate
	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.epa.gov/region08/air/permitting/tmnsr.html	

A. GENERAL SOURCE INFORMATION

1. Company Name		2. Source Name		
Anadarko Uintah Midstream, LL	С	Bridge Compressor Station		
3. Type of Operation		4. Portable Source?	Yes No 🗸	
Natural Gas Compression		5. Temporary Source?	Yes No 🗸	
6. NAICS Code		7. SIC Code		
211111		1311		
8. Physical Address (home bas	se for portable sources)			
Remote Location near Ouray, U	ltah			
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*	
Uinta and Ouray	Uintah	40.040217	-109.456214	
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*	
NE NE	17	98	22E	

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title		
Anadarko Uintah Midstream, LLC				
Mailing Address PO BOX173779, Denver, CO 80217				
Email Address				
Telephone Number	Facsimile Number			
2. Operator Name (if different from owner)		Title		
Same As Owner				
Mailing Address				
Email Address				
Telephone Number	Facsimile Number			
3. Source Contact		Title		
Clayton Rimer	5	Senior Maintenance Foreman		
Mailing Address				
1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,				
1368 S 1200 E, Vernal, UT 84078				
-				
1368 S 1200 E, Vernal, UT 84078				
1368 S 1200 E, Vernal, UT 84078 Email Address	Facsimile Number			
1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com	Facsimile Number			
1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number	Facsimile Number Title			
1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033		sentative		
1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact	Title	sentative		
1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier	Title	sentative		
1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier Mailing Address	Title	sentative		
1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier Mailing Address PO BOX 173779, Denver, CO 80217	Title	sentative		
1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier Mailing Address PO BOX 173779, Denver, CO 80217 Email Address	Title	sentative		

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SO_x) , nitrogen oxides (NO_x) , carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4) , hydrogen sulfide (H_2S) , total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM ₁₀	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	20.0	20.0	NOx - Nitrogen Oxides
СО	23.8	23.8	CO - Carbon Monoxide VOC - Volatile Organic Compound
VOC	26.0	26.0	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (l) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input,
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code</u>: North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard Industrial Classification Code</u> (http://www.osha.gov/pls/imis/sic_manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. County: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
- 2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
- 3. <u>Source Contact</u>: The source contact must be the local contact authorized to receive requests for data and information.
- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. <u>Allowable Emissions (See also, Potential to Emit)</u>: Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. Potential to Emit: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. <u>Actual Emissions</u>: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The Bridge Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression and a dehydration unit before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility was previously permitted as a Title V Major Source. Only one natural-gas fired Caterpillar G3512LE engine is installed at the site. The existing engine was manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ; therefore, the engine is not subject to the requirements of this subpart. All other natural gas-fired compressor driver engines at the facility have been removed. Electric compression is being installed for start-up in 2013. When the facility commences operation again, it will operate as a true minor source.

Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	JJJJ	ZZZZ
BRG311	Gas	1340	Caterpillar	G3512 TALE	4EK04793	10/19/2005	5/17/2007	No	Major

Emission Sources

Emitting sources onsite include:

- BRG311 Caterpillar G3512TALE compressor driver engine
- One 50 MMSCFD TEG dehydrator with reboiler
- · One mixed liquids storage tank and associated liquid tank truck loading
- · One natural gas fired line heater

Federally Enforceable Requirements

The Kerr-McGee Consent Decree signed in 2007 required the existing engines at the Bridge Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. Therefore, the CO control requirements are federally enforceable. The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

The 2007 Consent Decree also requires that dehydration unit emissions be controlled to a maximum of 1 tpy VOC making such requirements federally enforceable. HAP pollutants are controlled in conjunction with the VOC emissions. The HAP emissions would also be an enforceable condition as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

Uncontrolled Emissions								
Unit ID	Description	NOx	со	VOC	PM10			
BRG311	G3512TALE	19.4	23.3	4.3	0.0			
DHY1	Dehydration Unit/Reboiler	0.4	0.3	1.0	0.0			
TK1-3	Tank Emissions	0.0	0.0	20.0	0.0			
L1	Tank Truck Loading	0.0	0.0	0.7	0.0			
HTR-1	Heater	0.3	0.2	Insig.	-			
	Total	20.0	23.8	26.0	0.0			

PTE Emissions (TPY)							
Unit ID	Description	NOx	CO	VOC	PM10		
BRG311	G3512TALE	19.4	1.6	3.2	0.0		
DHY1	Dehydration Unit/Reboiler	0.0	0.0	1.0	0.0		
TK1-3	Tank Emissions	0.0	0.0	20.0	0.0		
L1	Tank Truck Loading	0.0	0.0	0.7	0.0		
HTR-1	Heater	0.3	0.2 .	Insig.	-		
	Total	19.7	1.8	24.9	0.0		

Emission Calculations

Bridge Compressor Station Engine Detail Sheet

Source ID Number

ENG311

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3512TALE

Manufacture Date

8/15/2001

Serial Number

7NJ00835

Date in Service

10/26/2011

Potential fuel usage

96.2 MMscf/yr

Emission Controls

Lean Burn

10979 scf/hr

Stack ID

ENG311

Engine Rating

1340 BHP

Oxidation Catalyst/AFR

Fuel Heating Value

905.0 Btu/scf 9.94 MMBtu/hr

Heat Rate Engine Heat Rate

7415 Btu/hp-hr

Uncontrolled Emissions

Checker offer Lambs (1985)							
Pollutant	Emission Factor		Estimated Emissions		Source of Emission		
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	_	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	_	
CO	0.54	1.80	5.32	23.3	Manuf. Data		
VOC	0.10	0.33	0.97	4.3	Manuf. Data		
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2		
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2		
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2		
HAPs			0.88	3.84		lb/yr	
HCHO	0.07	0.25	0.74	3.23	Manuf. Data	6469.7	
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	38.3	
Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447.4	
Acetaldehyde	8.36E-03	0.0281	0.08	0.36	AP-42, Table 3.2-2	727.7	

PTE Emissions

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	
CO*	0.04	0.13	0.37	1.6	Manuf. Control Data	
VOC*	0.07	0.25	0.73	3.2	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.32	1.38		lb/yr
HCHO*	0.02	0.06	0.18	0.78	Manuf. Control Data	1552.7
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	0.08	0.36	AP-42, Table 3.2-2	727.7

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Basis

Annual Average Gas Production:

200.0 MMSCFD

Annual Average Crude Production:

50.0

BOPD

Condensate Storage Emission Estimates

Storage Tank Emission Factor*:

0.1

TPY VOC/MMSCFD

Storage Tank VOC Emissions

20.00

TPY Requested

*Emission factor derived from known production rates.

Condensate Loading Emission Estimates

Truck Loading Equation:

$$L = 12.46 - \frac{SPM}{T}$$
 (from AP-42, section 5.2, equation 1)

Calculation Variables:

L loading loss (lbs/1,000 gal)

S saturation factor

0.60

0.60 (from AP-42, Table 5.2-1, submerged loading)

P true vapor pressure of liquid loaded at bulk liquid temperature (psia) 2.60 (estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)

M molecular weight of vapor (lb/lb-mole)

50.00 (from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

L = 1.89 lbs/1,000 gal loaded

Truck Loading VOC Emissions 0.72 TPY Requested

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriate
	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.epa.gov/region08/air/permitting/tmnsr.html	

A. GENERAL SOURCE INFORMATION

1. Company Name		2. Source Name		
Anadarko Uintah Midstream, LL	С	Diablo Compressor Station		
3. Type of Operation		4. Portable Source?	Yes No ✓	
Natural Gas Compression		5. Temporary Source?	Yes No 🗸	
6. NAICS Code		7. SIC Code		
211111		1311		
8. Physical Address (home bas	se for portable sources)			
Remote Location near Ouray, U	-			
Remote Location flear Ouray, o	taii			
	T			
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*	
Uinta and Ouray	Uintah	39.971376	-109.290451	
-				
10 0 0 0 0	101 0 11 11			
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*	
SW SE	2	108	23E	
			·	

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address		
PO BOX173779, Denver, CO 80217		
Email Address		
Telephone Number	Facsimile Number	
Telephone Number	racsimile Number	
2. Operator Name (if different from owner)		Title
		Tiue
Same As Owner		errenne ner
Mailing Address		
Email Address		
Telephone Number	Facsimile Number	
3. Source Contact		Title
Clayton Rimer		Senior Maintenance Foreman
Mailing Address		
1368 S 1200 E, Vernal, UT 84078		
Email Address		
Clayton.Rimer@anadarko.com		
Telephone Number	Facsimile Number	
435-781-7033		•
4. Compliance Contact	Title	
Chad Schlichtemeier	Senior Staff EHS Repre	esentative
Mailing Address		
PO BOX 173779, Denver, CO 80217		
Email Address		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Chad.Schlichtemeier@anadarko.com		
Telephone Number	Facsimile Number	
720-929-6867	720-929-7105	

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SO_x) , nitrogen oxides (NO_x) , carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4) , hydrogen sulfide (H_2S) , total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM ₁₀	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	17.0	17.0	NOx - Nitrogen Oxides CO - Carbon Monoxide
СО	5.2	5.2	VOC - Volatile Organic Compound
VOC	42.4	42.4	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (l) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input, and
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code</u>: North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard</u> Industrial Classification Code (http://www.osha.gov/pls/imis/sic_manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. County: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
- 2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
- 3. <u>Source Contact</u>: The source contact must be the local contact authorized to receive requests for data and information.
- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. <u>Allowable Emissions (See also, Potential to Emit)</u>: Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. <u>Potential to Emit</u>: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. <u>Actual Emissions</u>: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The Diablo Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression and dehydration before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. The Caterpillar G3608 TALE engine was manufactured following the effective date under 40CFR Part 60, Subpart JJJJ and, therefore, is subject to the requirements of this subpart.

Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	JJJJ	ZZZZ
DBL 1	Gas	2370	Caterpillar	G3608 TALE	BEN00610	8/8/2009	3/8/2011	Yes	Area

Emission Sources

Current emitting sources onsite include:

- DBL 1 Caterpillar G3608TALE compressor driver engine
- Two mixed liquids storage tanks and associated liquid tank truck loading
- Two low emissions 50 MMSCFD Dehydration Units
- · One natural gas fired line heater

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NO_X) from the Caterpillar G3608 TALE, engine. Additionally, the engine is equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH₂O).

Federally Enforceable Requirements

Kerr-McGee Consent Decree signed in 2007 required the existing engines at the Diablo Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. The Consent Decree also requires that any new lean-burn engines at the Diablo Compressor Station to be equipped with an oxidation catalyst meeting the same requirements. Therefore, the CO control requirements are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

Uncontrolled Emissions (TPY)						
Unit ID	Description	NOx	CO	VOC	PM10	
DBL 1	G3608TALE	16.0	62.9	14.4	0.0	
DEHY-1	Low Emissions Dehy/Reboiler	0.4	0.3	1.0	0.0	
DEHY-2	Low Emissions Dehy/Reboiler	0.4	0.3	1.0	0.0	
HTR-1	Heater	0.3	0.2	Insig.	-	
TK1-2	Storage Tanks		-	35.5		
L-1	Tank Truck Loading	-	-	1.3	-	
	Total	17.0	63.7	53.2	0.0	

PTE Emissions (TPY)						
Unit ID	Description	NOx	СО	VOC	PM ₁₀	
DBL 1	G3608TALE	16.0	4.4	3.6	0.0	
DEHY-1	Low Emissions Dehy/Reboiler	0.4	0.3	1.0	0.0	
DEHY-2	Low Emissions Dehy/Reboiler	0.4	0.3	1.0	0.0	
HTR-1	Heater	0.3	0.2	Insig.	-	
TK1-2	Storage Tanks	•	-	35.5	-	
L-1	Tank Truck Loading	-	-	1.3	-	
	Total	17.0	5.2	42.4	0.0	

Diablo Compressor Station

Engine Detail Sheet

Source ID Number	DBL 1		
Source Description	4-Cycle Lean Burn		
Engine Usage	Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3608TALE	-	•
Serial Number	BEN00610	Manufacture Date	8/8/2009
Date in Service	3/8/2011	Potential fuel usage	155.8 MMscf/yr
Emission Controls	Lean Burn		17784 scf/hr
	Oxidation Catalyst/AFR		
		Stack ID	DBL 1
Engine Rating	2370 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.58 ft
Heat Rate	16.09 MMBtu/hr	Exit Velocity	136.8 ft/s
Engine Heat Rate	6791 Btu/hp-hr	Exit Temperature	857 deg F
		Volume Flow Rate	16,141 ft ³ /min

Uncontrolled Emissions

Pollutant	Emission	n Factor	Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.23	0.70	3.66	16.0	Manuf. Data	
CO	0.89	2.75	14.37	62.9	Manuf. Data	
VOC	0.20	0.63	3.29	14.4	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.04	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0002	0.00	0.01	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0002	0.00	0.01	AP-42, Table 3.2-2	
HAPs			1.58	6.93		lb/yr
НСНО	0.08	0.26	1.36	5.95	Manuf. Data	11900.4
Benzene	4.40E-04	0.0014	0.01	0.03	AP-42, Table 3.2-2	62.0
Acrolein	5.14E-03	0.0158	80.0	0.36	AP-42, Table 3.2-2	724.7
Acetaldehyde	8.36E-03	0.0258	0.13	0.59	AP-42, Table 3.2-2	1178.7
						0.0

PTE Emissions

Pollutant	Emission Factor Estimated Emissions		Source of Emission			
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.23	0.70	3.66	16.0	Manuf. Data	
CO*	0.06	0.19	1.01	4.4	Manuf. Control Data/CD	
VOC*	0.05	0.16	0.82	3.6	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.04	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0002	0.00	0.01	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0002	0.00	0.01	AP-42, Table 3.2-2	
HAPs			0.55	2.41		lb.
HCHO*	0.02	0.06	0.33	1.43	Manuf. Control Data	2856
Benzene	4.40E-04	0.0014	0.01	0.03	AP-42, Table 3.2-2	62
Acrolein	5.14E-03	0.0158	0.08	0.36	AP-42, Table 3.2-2	724
Acetaldehyde	8.36E-03	0.0258	0.13	0.59	AP-42, Table 3.2-2	1178

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Diablo Compressor Station Tank and Loading Emission Calculations

Basis

Annual Average Gas Production:

71.0 MMSCFD

Annual Average Crude Production:

88.7 BOPD

Condensate Storage Emission Estimates

Storage Tank Emission Factor*:

0.5 TPY V

TPY VOC/MMSCFD

Storage Tank VOC Emissions

35.48

TPY Requested

Condensate Loading Emission Estimates

Truck Loading Equation:

$$L = 12.46 \frac{\text{SPM}}{T} \text{ (from AP-42, section 5.2, equation 1)}$$

Calculation Variables:

L loading loss (lbs/1,000 gal)

S saturation factor

0.60 (from AP-42, Table 5.2-1, submerged loading)

P true vapor pressure of liquid loaded at bulk liquid temperature (psia)

2.60 (estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)

M molecular weight of vapor (lb/lb-mole)

50.00 (from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

L = 1.89 lbs/1,000 gal loaded

Truck Loading VOC Emissions 1.28 TPY Requested

^{*}Emission factor derived from known production rates.

OMB Control No. 2060-0003 Approval expires 04/30/2012



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN ÍNDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriate
	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.ena.gov/region08/air/permitting/tmpsr.html	

A. GENERAL SOURCE INFORMATION

A. GENERAL SOURCE INFORMATION					
1. Company Name		2. Source Name			
Anadarko Uintah Midstream, LLC		East Bench Compressor Station			
3. Type of Operation		4. Portable Source?	Yes No V		
Natural Gas Compression		5. Temporary Source?	Yes ☐ No ✓		
6. NAICS Code		7. SIC Code			
211111		1311			
8. Physical Address (home bas	e for portable sources)				
Remote Location near Ouray, U	-				
Nemote Location near Ouray, O	lan				
0.72	10. 0	11 - T -4 ² 4 - J - ¥	11b Y		
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*		
Uinta and Ouray	Uintah	39.907616	-109.466166		
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*		
		•	_		
SE NW	32	10S	22E		

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address PO BOX173779, Denver, CO 80217		
Email Address		
Telephone Number	Facsimile Number	
2. Operator Name (if different from owner)		Title
Same As Owner		
Mailing Address		
Email Address		
Telephone Number	Facsimile Number	
3. Source Contact		Title
Clayton Rimer		Senior Maintenance Foreman
Mailing Address		
1368 S 1200 E, Vernal, UT 84078		
Email Address		
Clayton.Rimer@anadarko.com		
Telephone Number	Facsimile Number	
435-781-7033		
4. Compliance Contact	Title	· · · · · · · · · · · · · · · · · · ·
Chad Schlichtemeier	Senior Staff EHS Repre	esentative
Mailing Address		
PO BOX 173779, Denver, CO 80217		
Email Address		
Chad.Schlichtemeier@anadarko.com		
Telephone Number	Facsimile Number	
720-929-6867	720-929-7105	

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SO_x) , nitrogen oxides (NO_x) , carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4) , hydrogen sulfide (H_2S) , total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM ₁₀	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2,5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	38.2	38.2	NOx - Nitrogen Oxides CO - Carbon Monoxide
СО	3.5	3.5	VOC - Volatile Organic Compound
VOC	14.7	14.7	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (l) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input, and
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code</u>: North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard</u> Industrial Classification Code (http://www.osha.gov/pls/imis/sic_manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. County: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
- 2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
- 3. <u>Source Contact</u>: The source contact must be the local contact authorized to receive requests for data and information.
- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. Allowable Emissions (See also, Potential to Emit): Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. <u>Potential to Emit</u>: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. <u>Actual Emissions</u>: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The East Bench Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. All engines were manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ and, therefore, the engines are not subject to the requirements of this subpart.

Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	JJJJ	ZZZZ
EAB 1	Gas	1265	Caterpillar	G3516 TALE	4EK01910	3/27/1998	2/5/2004	No	Area
EAB 2	Gas	1340	Caterpillar	G3516 TALE	4EK01691	12/4/1997	Pre 2007	No	Area

Emission Sources

Current emitting sources onsite include:

- EAB 1, EAB 2 Caterpillar G3516TALE compressor driver engines
- Two mixed liquids storage tanks and associated liquid tank truck loading
- · Two natural gas fired line heaters

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NO_X) from the Caterpillar G3516 TALE, engines. Additionally, the engines are equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH₂O).

Federally Enforceable Requirements

Kerr-McGee Consent Decree signed in 2007 required the existing engines at the East Bench Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. The Consent Decree also requires that any new lean-burn engines at the East Bench Compressor Station to be equipped with an oxidation catalyst meeting the same requirements. Therefore, the CO control requirements are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

Uncontrolled Emissions									
Unit ID	Description	NOx	СО	VOC	PM ₁₀				
EAB 1	G3516TALE	18.3	22.0	4.0	0.00				
EAB 2	G3516TALE	19.4	23.3	4.3	0.00				
HTR-1	Heater	0.3	0.2	Insig.	-				
HTR-2	Heater 2	0.3	0.2	Insig.	-				
TK-1&4	Storage Tanks	-	-	8.1	-				
L-1			-	0.3	-				
	Total	38.2	45.7	16.7	0.0				

PTE Emissions (TPY)									
Unit ID	Description	NOx	co	VOC	PM ₁₀				
EAB 1	G3516TALE	18.3	1.5	3.0	0.0				
EAB 2	G3516TALE	19.4	1.6	3.2	0.0				
HTR-1	Heater	0.3	0.2	Insig.	-				
HTR-2	Heater 2	0.3	0.2	Insig.	-				
TK-1&4	Storage Tanks	-		8.1	-				
L-1			-	0.3	-				
	Total	38.2	3.5	14.7	0.0				

East Bench Compressor Station 200

Engine Detail Sheet

Source ID Number	EAB 1		
Source Description	4-Cycle Lean Burn		
•	-		
Engine Usage	Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3516TALE		
Serial Number	4EK01910	Manufacture Date	3/27/1998
Date in Service	2/5/2004	Potential fuel usage	90.8 MMscf/yr
Emission Controls	Lean Burn		10365 scf/hr
	Oxidation Catalyst/AFR		
		Stack ID	EAB 1
Engine Rating	1265 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0 ft
Heat Rate	9.38 MMBtu/hr	Exit Velocity	135.8 ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840 deg F
		Volume Flow Rate	6,390 ft ³ /min

Uncontrolled Emissions

CHCOHE, OHC	Citconti offet Emissions								
Pollutant	Emission Factor		Estimate	ed Emissions	Source of Emission				
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor				
NOx	0.45	1.50	4.18	18.3	Manuf. Data				
CO	0.54	1.80	5.02	22.0	Manuf. Data				
VOC	0.10	0.33	0.92	4.0	Manuf. Data				
SOx	5.88E-04	0.002	0.01	0.02	AP-42, Table 3.2-2				
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2				
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2				
HAPs			0.83	3.63		lb/yr			
HCHO	0.07	0.25	0.70	3.05	Manuf. Data	6107.6			
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	36.2			
Acrolein	5.14E-03	0.0173	0.05	0.21	AP-42, Table 3.2-2	422.4			
Acetaldehyde	8.36E-03	0.0281	0.08	0.34	AP-42, Table 3.2-2	686.9			

PTE Emissions

Pollutant	Emission Factor		Estimate	ed Emissions	Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.18	18.3	Manuf. Data	
CO*	0.04	0.13	0.35	1.5	Manuf. Control Data	
VOC*	0.07	0.25	0.69	3.0	Manuf. Control Data	
SOx	5.88E-04	0.002	0.01	0.02	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.30	1.31		lb/yr
HCHO*	0.02	0.06	0.17	0.73	Manuf. Control Data	1465.8
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	36.2
Acrolein	5.14E-03	0.0173	0.05	0.21	AP-42, Table 3.2-2	422.4
Acetaldehyde	8.36E-03	0.0281	0.08	0.34	AP-42, Table 3.2-2	686.9

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

East: Bench Compressor Station

Engine Detail Sheet

Source ID Number Source Description	EAB 2 4-Cycle Lean Burn		
Engine Usage	Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3516TALE		
Serial Number	4EK01691	Manufacture Date	12/4/1997
Date in Service	Pre 2007	Potential fuel usage	96.2 MMscf/yr
Emission Controls	Lean Burn		10979 scf/hr
	Oxidation Catalyst/AFR		
		Stack ID	EAB 2
Engine Rating	1340 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0 ft
Heat Rate	9.94 MMBtu/hr	Exit Velocity	135.8 ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840 deg F

Uncontrolled Emissions

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
<u></u>	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	_
CO	0.54	1.80	5.32	23.3	Manuf. Data	
VOC	0.10	0.33	0.97	4.3	Manuf. Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.88	3.84		lb/yr
HCHO	0.07	0.25	0.74	3.23	Manuf. Data	6469.7
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	0.08	0.36	AP-42, Table 3.2-2	727.7

Volume Flow Rate

6,390 ft³/min

PTE Emissions

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	
CO*	0.04	0.13	0.37	1.6	Manuf. Control Data	
VOC*	0.07	0.25	0.73	3.2	Manuf. Control Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.32	1.38		lb/yr
HCHO*	0.02	0.06	0.18	0.78	Manuf. Control Data	1552.7
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	80.0	0.36	AP-42, Table 3.2-2	727.7

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

East Bench Compressor Station Tank and Loading Emission Calculations

Basis

Annual Average Gas Production:

16.3 MMSCFD

Annual Average Crude Production:

20.4 BOPD

Condensate Storage Emission Estimates

Storage Tank Emission Factor*:

0.5 TPY VOC/MMSCFD

Storage Tank VOC Emissions

8.14

TPY Requested

Condensate Loading Emission Estimates

Truck Loading Equation:

$$L = 12.46 \frac{SPM}{T}$$
 (from AP-42, section 5.2, equation 1)

Calculation Variables:

L loading loss (lbs/1,000 gal)

S saturation factor

0.60 (from AP-42, Table 5.2-1, submerged loading)

P true vapor pressure of liquid loaded at bulk liquid temperature (psia)

2.60 (estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)

M molecular weight of vapor (lb/lb-mole)

50.00 (from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

L = 1.89 lbs/1,000 gal loaded

Truck Loading VOC Emissions 0.29 TPY Requested

^{*}Emission factor derived from known production rates.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriate
	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.epa.gov/region08/air/permitting/tmnsr.html	

A. GENERAL SOURCE INFORMATION

A. GENERAL SOURCE INFORMATION							
1. Company Name		2. Source Name					
Anadarko Uintah Midstream, LLo	C	East Junior Compressor Sta	ation				
3. Type of Operation		4. Portable Source?	Yes No V				
Natural Gas Compression		5. Temporary Source?	Yes ∐ No ✓				
6. NAICS Code		7. SIC Code					
211111		1311					
8. Physical Address (home bas	e for portable sources)						
Remote Location near Ouray, U	tah						
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*				
Uinta and Ouray	Uintah	39.990631	-109.385192				
12a. Quarter-Quarter Section* NWSE	12b. Section* 36	12c. Township* 9S	12d. Range* 22E				

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address PO BOX173779, Denver, CO 80217		
Email Address		
Telephone Number	Facsimile Number	
2. Operator Name (if different from owner)	'	Title
Same As Owner		
Mailing Address		
Email Address		
Telephone Number	Facsimile Number	
3. Source Contact		Title
Clayton Rimer	\$	Senior Maintenance Foreman
Mailing Address		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
1368 S 1200 E, Vernal, UT 84078		
1368 S 1200 E, Vernal, UT 84078 Email Address		
Email Address	Facsimile Number	77.80
Email Address Clayton.Rimer@anadarko.com	Facsimile Number	10.00
Email Address Clayton.Rimer@anadarko.com Telephone Number	Facsimile Number Title	
Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033		sentative
Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact	Title	sentative
Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier	Title	sentative
Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier Mailing Address	Title	sentative
Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier Mailing Address PO BOX 173779, Denver, CO 80217	Title	sentative
Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier Mailing Address PO BOX 173779, Denver, CO 80217 Email Address	Title	sentative

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SO_x) , nitrogen oxides (NO_x) , carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4) , hydrogen sulfide (H_2S) , total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM ₁₀	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	35.1	35.1	NOx - Nitrogen Oxides CO - Carbon Monoxide
СО	3.0	3.0	VOC - Volatile Organic Compound
VOC	17.0	17.0	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (1) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input, and
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code</u>: North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard Industrial Classification Code</u> (http://www.osha.gov/pls/imis/sic_manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. County: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
- 2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
- 3. <u>Source Contact</u>: The source contact must be the local contact authorized to receive requests for data and information.
- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. <u>Allowable Emissions (See also, Potential to Emit)</u>: Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. <u>Potential to Emit</u>: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. Actual Emissions: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The East Junior Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. All engines were manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ and, therefore, the engines are not subject to the requirements of this subpart.

Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	าาาา	ZZZZ
EAJ 1	Gas	1085	Caterpillar	G3516 TALE	4EK0587	8/28/1995	5/17/2007	No	Area
EAJ 2	Gas	1340	Caterpillar	G3516 TALE	WPW01912	12/21/2007	4/9/2009	No	Area

Emission Sources

Current emitting sources onsite include:

- EAJ 1, EAJ 2 Caterpillar G3516TALE compressor driver engines
- · Two mixed liquids storage tanks and associated liquid tank truck loading
- · One natural gas fired line heater

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NOx) from the Caterpillar G3516 TALE engines. Additionally, each of the Caterpillar G3516 TALE engines is equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH2O).

Federally Enforceable Requirements

Kerr-McGee Consent Decree signed in 2007 required the existing engines at the East Junior Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. The Consent Decree also requires that any new lean-burn engines at the East Junior Compressor Station to be equipped with an oxidation catalyst meeting the same requirements. Therefore, the CO control requirements are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

Uncontrolled Emissions											
Unit ID	Description	NOx	CO	VOC	PM10						
EAJ1	G3516TALE	15.7	18.9	3.5	0.0						
EAJ2	G3516TALE	19.4	23.3	4.3	0.0						
TK 1-2	Storage Tanks	-		10.9	-						
L-1	Tank Truck Loading			0.4	-						
HTR-1	Line Heater	0.3	0.2	Insig.	-						
	Total	35.1	42.1	19.0	0.0						

	PTE Emissions (TPY)											
Unit ID	Description	NOx	CO	VOC	PM10							
EAJ 1	G3516TALE	15.7	1.3	2.6	0.0							
EAJ2	G3516TALE	19.4	1.6	3.2	0.0							
TK 1-2	Storage Tanks	-	-	10.9	-							
L-1	Tank Truck Loading	-	-	0.4	-							
HTR-1	Line Heater	0.3	0.2	Insig.	-							
	Total	35.1	3.0	17.0	0.0							

Per guidance, PTE accounts for legally and practically enforceable restrictions (emission controls).

Emission Calculations

East Junior Compress or Station **Engine Detail Sheet** 4963 ft as1 Elevation: Source ID Number EAJ 1 Source Location Zone: UTME: Source Description 4-Cycle Lean Burn Engine Usage Compressor Engine UTMN: Caterpillar Engine Make Potential operation 8760 hr/yr **G3516TALE** Engine Model Manufacture Date Serial Number 4EK0587 8/28/1995 Potential fuel usage 77.9 MMscf/yr Date in Service 5/17/2007 **Emission Controls** Lean Burn 8890 scf/hr Oxidation Catalyst/AFR Stack ID EAJ 1 Stack Height ft **Engine Rating** 1085 BHP Fuel Heating Value 905.0 Btu/scf Stack Diameter 1.0 ft Heat Rate 8.05 MMBtu/hr Exit Velocity 135.8 ft/s Engine Heat Rate 7415 Btu/hp-hr Exit Temperature 840 deg F Volume Flow Rate 6,390 ft3/min

Uncontrolled Emissions

Pollutant	Emissio	n Factor	Rating	Operating Hrs	Estimated 1	Emissions	Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1085	8760	3.59	15.7	Manuf. Data
CO	0.54	1.80	1085	8760	4.31	18.9	Manuf. Data
VOC	0.10	0.33	1085	8760	0.79	3.5	Manuf. Data
SOx	5.88E-04	0.002	1085	8760	0.00	0.02	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1085	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1085	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs							
НСНО	0.07	0.25	1085	8760	0.60	2.62	Manuf. Data
Benzene	4.40E-04	0.0015	1085	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1085	8760	0.041	0.18	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1085	8760	0.067	0.29 3.11	AP-42, Table 3.2-2

Pollutant	Emission	Emission Factor		Emission Factor Rating		Emission Factor Rating Operating Hrs		Estimated	Emissions	Source of Emission
10200	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr) (tpy)		Factor			
NOx	0.45	1.50	1085	8760	3.59	15.7	Manuf. Data			
CO*	0.04	0.13	1085	8760	0.30	1.3	Manuf. Control Data			
VOC*	0.07	0.25	1085	8760	0.59	2.6	Manuf. Control Data			
SOx	5.88E-04	0.002	1085	8760	0.00	0.02	AP-42, Table 3.2-2			
PM10	7.71E-05	0.0003	1085	8760	0.00	0.00	AP-42, Table 3.2-2			
PM2.5	7.71E-05	0.0003	1085	8760	0.00	0.00	AP-42, Table 3.2-2			
HAPs					'	1.12				
НСНО*	0.02	0.060	1085	8760	0.14	0.63	Manuf. Control Data			
Benzene	4.40E-04	0.0015	1085	8760	0.004	0.02	AP-42, Table 3.2-2			
Acrolein	5.14E-03	0.0173	1085	8760	0.041	0.18	AP-42, Table 3.2-2			
Acetaldehyde	8.36E-03	0.0281	1085	8760	0.067	0.29	AP-42, Table 3.2-2			

^{*}CO: 93% Control Efficiency; VO C: 25% Control Efficency; Formaldehyde: 76% Control Efficiency

East Junior Compressor Station

		Engine Detail Sheet		
			Elevation:	4963 ft as1
Source ID Number	EAJ 2	Source Location	Zone:	
Source Description	4-Cycle Lean Burn		UTME:	
Engine Usage	Compressor Engine		UTMN:	
Engine Make	Caterpillar	Potential operation		8760 hr/yr
Engine Model	G3516TALE			
Serial Number	WPW01912	Manufacture Date		12/21/2007
Date in Service	4/9/2009	Potential fuel usage		96.2 MMscf/yr
Emission Controls	Lean Burn			10979 scf/hr
	Oxidation Catalyst/AFR			
		Stack ID	EAJ 2	
Engine Rating	1340 BHP	Stack Height		ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0	ft
Heat Rate	9.94 MMBtu/hr	Exit Velocity	135.8	ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840	deg F
		Volume Flow Rate	6,390	ft³/min

Uncontrolled Emissions

Pollutant	Emission	1 Factor	Rating	Operating Hrs	Estimated	Emissions	Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO	0.54	1.80	1340	8760	5.32	23.3	Manuf. Data
VOC	0.10	0.33	1340	8760	0.97	4.3	Manuf. Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs							
НСНО	0.07	0.25	1340	8760	0.74	3.23	Manuf. Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

Pollutant	Emission	Emission Factor		Operating Hrs	Estimated	Emissions	Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO*	0.04	0.13	1340	8760	0.37	1.6	Manuf. Control Data
VOC*	0.07	0.25	1340	8760	0.73	3.2	Manuf. Control Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs					•	1.38	
HCHO*	0.02	0.060	1340	8760	0.18	0.78	Manuf. Control Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficency; Formaldehyde: 76% Control Efficiency

East Junior Compressor Station Tank and Loading Emission Calculations

Basis

Annual Average Gas Production:

21.7 **MMSCFD**

Annual Average Crude Production:

BOPD 27.1

Condensate Storage Emission Estimates

Storage Tank Emission Factor*:

0.5 TPY VOC/MMSCFD

Uncontrolled Storage Tank VOC Emissions:

TPY 10.85

VRU Tank Controls:

0.00%

Controlled Storage Tank VOC Emissions:

10.85

TPY Requested

Emission factor derived from known production rates.

Condensate Loading Emission Estimates

Truck Loading Equation:

$$L = 12.46 \frac{\text{SPM}}{T}$$
 (from AP-42, section 5.2, equation 1)

Calculation Variables:

- L loading loss (lbs/1,000 gal)
- S saturation factor

0.60

(from AP-42, Table 5.2-1, submerged loading) P true vapor pressure of liquid loaded at bulk liquid temperature (psia)

(estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)

M molecular weight of vapor (lb/lb-mole)

50.00 (from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

> L 1.89 lbs/1,000 gal loaded

Truck Loading VOC Emissions 0.39 **TPY Requested**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriate
	If you need assistance in identifying the appropriate Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.epa.gov/region08/air/permitting/tmnsr.html	

A. GENERAL SOURCE INFORMATION

1. Company Name	A STATE OF THE PARTY OF THE PAR	2. Source Name				
1. Company Name		2. Bource Name				
Anadarko Uintah Midstream, LL	С	L-16 Compressor Station				
7 inddarko Omtari Midotrodiri, EE		2 To compressor clation				
3. Type of Operation		4. Portable Source?	Yes No 🗸			
Natural Cara Camanana sian		5. Temporary Source?	Yes No 🗸			
Natural Gas Compression		1				
6. NAICS Code		7. SIC Code				
			•			
211111		1311				
8. Physical Address (home bas						
Remote Location near Ouray, U	tah					
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*			
Uinta and Ouray	Uintah	40.024761	-109.654239			
-						
10 0 1 0 1 0 1	101 0 4 4	10-70-11-4	101 D			
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*			
NE NW	22	9S	20E			

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address PO BOX173779, Denver, CO 80217		
Email Address		
Telephone Number	Facsimile Number	
		TOOTH HIS
2. Operator Name (if different from owner)		Title
Same As Owner		
Mailing Address		
Email Address		
Telephone Number	Facsimile Number	
3. Source Contact		Title
Clayton Rimer		Senior Maintenance Foreman
Mailing Address		
1368 S 1200 E, Vernal, UT 84078		
Email Address		
Clayton.Rimer@anadarko.com		
Telephone Number	Facsimile Number	
435-781-7033		
4. Compliance Contact	Title	
Chad Schlichtemeier	Senior Staff EHS Repre	esentative
Mailing Address		, Landers and Maria
PO BOX 173779, Denver, CO 80217		
Email Address		
Chad.Schlichtemeier@anadarko.com		
Telephone Number	Facsimile Number	
720-929-6867	720-929-7105	

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM₁₀, PM_{2.5}, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H₂SO₄), hydrogen sulfide (H₂S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM₁₀, PM_{2.5}, sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H₂SO₄), hydrogen sulfide (H₂S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM ₁₀	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	66.3	66.3	NOx - Nitrogen Oxides CO - Carbon Monoxide
CO	7.3	7.3	VOC - Volatile Organic Compound
voc	28.5	28.5	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (i) Petroleum refineries;
- (k) Lime plants;
- (l) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input,
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
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- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard</u> Industrial Classification Code (http://www.osha.gov/pls/imis/sic manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. County: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
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C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. Allowable Emissions (See also, Potential to Emit): Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. Potential to Emit: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. <u>Actual Emissions</u>: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The L-16 Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. All engines were manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ and, therefore, the engines are not subject to the requirements of this subpart.

Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	1111	ZZZZ
L-16 GEN	Gas	860	Caterpillar	G3512 LE	4KC00326	Pre-1997	11/14/2011	No	Area
L-16 2	Gas	1340	Caterpillar	G3516 TALE	WPW01755	10/25/2007	10/16/2008	No	Area
L-16 3	Gas	1265	Caterpillar	G3516 TALE	4EK01714	12/11/1997	4/5/2010	No	Area
L-16 4	Gas	1775	Caterpillar	G3606 LE	4ZS00506	7/28/2005	11/14/2011	No	Area

Emission Sources

Current emitting sources onsite include:

- L-16 GEN Caterpillar G3512LE generator engine
- L-16 2, L-16 3, L-16 4 Caterpillar gas compressor driver engines
- Two mixed liquids storage tanks and associated liquid tank truck loading
- One natural gas fired line heater

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NOx) from the Caterpillar engines. Additionally, each of the Caterpillar engines is equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH2O).

Federally Enforceable Requirements

Kerr-McGee Consent Decree signed in 2007 required the existing engines at the L-16 Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. The Consent Decree also requires that any new lean-burn engines at the L-16 Compressor Station to be equipped with an oxidation catalyst meeting the same requirements. Therefore, the CO control requirements are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

	Uncontrolled Emissions											
Unit ID Description NOx CO VOC												
L-16GEN	G3512 LE	16.6	16.4	2.4	0.00							
L-162	G3516 TALE	19.4	23.3	4.3	0.00							
L-163	G3516 TALE	18.3	22.0	4.0	0.00							
L-164	G3606 LE	12.0	42.8	10.3	0.00							
TNK 1-2	Storage Tanks	-	-	12.8	-							
L-1	Truck Loading	-	-	0.5	-							
HTR-1	0.2	Insig.										
	Total	66.3	104.5	33.8	0.0							

	PTE Emissions (TPY)											
Unit ID Description NOx CO VOC												
L-16GEN	G3512 LE	16.6	1.1	1.8	0.0							
L-162	G3516 TALE	19.4	1.63	3.2	0.0							
L-163	G3516 TALE	18.3	1.54	3.0	0.0							
L-164	G3606 LE	12.0	3.00	7.7	0.0							
TNK 1-2	Storage Tanks	-		12.8	-							
L-1				0.5	-							
HTR-1	Line Heater	0.3	0.2	Insig.	-							
	Total	66.3	7.3	28.5	0.0							

Emission Calculations

L-16 Compressor Station **Engine Detail Sheet**

Source ID Number

L-16GEN

Source Description

4-Cycle Lean Burn

Engine Usage

Generator Engine

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3512 LE

Manufacture Date

pre-1997

Serial Number Date in Service 4KC00326

12/8/2011

Potential fuel usage

62.8 MMscf/yr

Emission Controls

Lean Burn

7171 scf/hr

Engine Rating

860 BHP

Oxidation Catalyst/AFR

Fuel Heating Value

905.0 Btu/scf

Heat Rate

6.49 MMBtu/hr

Engine Heat Rate

7546 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission Factor		Emission Factor Rating Operating H		Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.58	2.00	860	8760	3.79	16.6	Manuf. Data
CO	0.58	1.97	860	8760	3.74	16.4	Manuf. Data
VOC	0.08	0.29	860	8760	0.55	2.4	Manuf. Data
SOx	5.88E-04	0.002	860	8760	0.00	0.02	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	860	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	860	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						2.80	
HCHO	0.08	0.29	860	8760	0.55	2.41	Manuf. Data
Benzene	4.40E-04	0.0015	860	8760	0.003	0.01	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0176	860	8760	0.033	0.15	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0286	860	8760	0.054	0.24	AP-42, Table 3.2-2

Pollutant	Emission Factor		Rating	Operating Hrs	Estimated	Emissions	Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.58	2.00	860	8760	3.79	16.6	Manuf. Data
CO*	0.04	0.14	860	8760	0.26	1.1	Manuf. Control Data
VOC	0.06	0.22	860	8760	0.41	1.8	Manuf. Control Data
SOx	5.88E-04	0.002	860	8760	0.00	0.02	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	860	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	860	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						0.97	
HCHO*	0.02	0.070	860	8760	0.13	0.58	Manuf. Control Data
Benzene	4.40E-04	0.0015	860	8760	0.003	0.01	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0176	860	8760	0.033	0.15	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0286	860	8760	0.054	0.24	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

L-16 Compressor Station Engine Detail Sheet

Source ID Number

L-162

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3516 TALE

Manufacture Date

10/25/2007

Serial Number Date in Service WPW 01755 10/16/2008

Potential fuel usage

96.2 MMscf/yr

Emission Controls

Lean Burn

tolitiai laoi asago

10979 scf/hr

Engine Rating
Fuel Heating Value

1340 BHP 905.0 Btu/scf 9.94 MMBtu/hr

Oxidation Catalyst/AFR

Heat Rate Engine Heat Rate

7415 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission Factor		Emission Factor Rating Operating Hrs		Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO	0.54	1.80	1340	8760	5.32	23.3	Manuf. Data
VOC	0.10	0.33	1340	8760	0.97	4.3	Manuf. Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						3.84	
HCHO	0.07	0.25	1340	8760	0.74	3.23	Manuf. Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

Pollutant	Emission Factor Rating Operating Hrs Estimated En		Emission Factor		d Emissions	Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO*	0.04	0.13	1340	8760	0.37	1.6	Manuf. Control Data
VOC*	0.07	0.25	1340	8760	0.73	3.2	Manuf. Control Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs					'	1.38	
HCHO*	0.02	0.06	1340	8760	0.18	0.78	Manuf. Control Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

L-16 Compressor Station Engine Detail Sheet

Source ID Number

L-163

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model Serial Number G3516 TALE

04EK01714

Manufacture Date

12/11/1997

Date in Service

4/5/2010

Potential fuel usage

90.8 MMscf/yr 10365 scf/hr

Emission Controls

Lean Burn

assion Controls Lean Burn

Oxidation Catalyst/AFR

Engine Rating

1265 BHP

Fuel Heating Value

905.0 Btu/scf 9.38 MMBtu/hr

Heat Rate Engine Heat Rate

7415 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission	n Factor	Rating	Operating Hrs	Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1265	8760	4.18	18.3	Manuf. Data
CO	0.54	1.80	1265	8760	5.02	22.0	Manuf. Data
VOC	0.10	0.33	1265	8760	0.92	4.0	Manuf. Data
SOx	5.88E-04	0.002	1265	8760	0.01	0.02	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs					•	3.63	
HCHO	0.07	0.25	1265	8760	0.70	3.05	Manuf. Data
Benzene	4.40E-04	0.0015	1265	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1265	8760	0.048	0.21	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1265	8760	0.078	0.34	AP-42, Table 3.2-2

Pollutant	Emission	n Factor	Rating Operating Hrs Estimated Emissions		Source of Emission		
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1265	8760	4.18	18.3	Manuf. Data
CO*	0.04	0.126	. 1265	8760	0.35	1.5	Manuf. Control Data
VOC*	0.07	0.25	1265	8760	0.69	3.0	Manuf. Control Data
SOx	5.88E-04	0.002	1265	8760	0.01	0.02	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs					•	1.31	
HCHO*	0.02	0.06	1265	8760	0.17	0.73	Manuf. Control Data
Benzene	4.40E-04	0.0015	1265	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1265	8760	0.048	0.21	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1265	8760	0.078	0.34	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

L-16 Compressor Station

Engine Detail Sheet

Source ID Number

L-164

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine Caterpillar

Engine Make

G3606 LE

Potential operation

8760 hr/yr

Engine Model

Manufacture Date

7/28/2005

Serial Number

4ZS00506

133.7 MMscf/yr

Date in Service

11/14/2011

Potential fuel usage

15265 scf/hr

Emission Controls

Lean Burn

Oxidation Catalyst/AFR

Engine Rating Fuel Heating Value

Engine Heat Rate

1775 BHP 905.0 Btu/scf

Heat Rate

13.81 MMBtu/hr 7783 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission Factor Rating Operating Hrs Estimated Emissions		Emissions	Source of Emission			
Tonatant	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.20	0.70	1775	8760	2.74	12.0	Manuf. Data
CO	0.71	2.50	1775	8760	9.78	42.8	Manuf. Data
VOC	0.17	0.60	1775	8760	2.35	10.3	Manuf. Data
SOx	5.88E-04	0.002	1775	8760	0.01	0.04	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1775	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1775	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs					1	5.30	
HCHO	0.07	0.26	1775	8760	1.02	4.46	Manuf. Data
Benzene	4.40E-04	0.0016	1775	8760	0.006	0.03	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0181	1775	8760	0.071	0.31	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0295	1775	8760	0.115	0.51	AP-42, Table 3.2-2

Pollutant	Emission	n Factor	Rating	Operating Hrs	Estimated	Emissions	Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.20	0.70	1775	8760	2.74	12.0	Manuf. Data
CO*	0.05	0.18	1775	8760	0.68	3.0	Manuf. Control Data
VOC*	0.13	0.45	1775	8760	1.76	7.7	Manuf. Data
SOx	5.88E-04	0.002	1775	8760	0.01	0.04	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1775	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1775	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs					'	1.91	
HCHO*	0.02	0.06	1775	8760	0.24	1.07	Manuf. Control Data
Benzene	4.40E-04	0.0016	1775	8760	0.006	0.03	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0181	1775	8760	0.071	0.31	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0295	1775	8760	0.115	0.51	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

Basis

Annual Average Gas Production:

25.5 MMSCFD

Annual Average Crude Production:

31.9 BOPD

Condensate Storage Emission Estimates

Storage Tank Emission Factor*:

0.5 TPY

TPY VOC/MMSCFD

Uncontrolled Storage Tank VOC Emissions: 12.77

2.77 TPY

Emission factor derived from known production rates.

Condensate Loading Emission Estimates

Truck Loading Equation:

L =
$$12.46 \frac{\text{SPM}}{\text{T}}$$
 (from AP-42, section 5.2, equation 1)

Calculation Variables:

L loading loss (lbs/1,000 gal)

S saturation factor

0.60 (from AP-42, Table 5.2-1, submerged loading)

P true vapor pressure of liquid loaded at bulk liquid temperature (psia) 2.60 (estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)

M molecular weight of vapor (lb/lb-mole)

50.00 (from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

L = 1.89 lbs/1,000 gal loaded

Truck Loading VOC Emissions 0.46 TPY Requested



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriate
	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.epa.gov/region08/air/permitting/tmnsr.html	

A. GENERAL SOURCE INFORMATION

A. GERERAL SOURCE I	VI OZGUZZZZOTY				
1. Company Name		2. Source Name			
Anadarko Uintah Midstream, LL	С	Morgan States Compressor Station			
3. Type of Operation		4. Portable Source?	Yes No V		
Natural Gas Compression		5. Temporary Source?	Yes No 🗸		
6. NAICS Code		7. SIC Code			
211111		1311			
8. Physical Address (home bas	e for portable sources)				
Remote Location near Ouray, U	_		•		
Remote Eccation fical Curay, C	tari				
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*		
Uinta and Ouray	Uintah	39.9961472	109.504913		
J					
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*		
NW NW	36	98	21E		
·····	-				

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address PO BOX173779, Denver, CO 80217		
Email Address		
Telephone Number	Facsimile Number	
2. Operator Name (if different from owner)		Title
Same As Owner		
Mailing Address		No.
Email Address		
Telephone Number	Facsimile Number	
3. Source Contact		Title
Clayton Rimer	[Senior Maintenance Foreman
Mailing Address		
Mailing Address		
Mailing Address 1368 S 1200 E, Vernal, UT 84078		
Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address	Facsimile Number	
Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com		
Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number		
Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033	Facsimile Number	sentative
Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact	Facsimile Number	sentative
Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier	Facsimile Number	sentative
Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier Mailing Address	Facsimile Number	sentative
Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier Mailing Address PO BOX 173779, Denver, CO 80217	Facsimile Number	sentative
Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier Mailing Address PO BOX 173779, Denver, CO 80217 Email Address	Facsimile Number	sentative

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM₁₀, PM_{2.5}, sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H₂SO₄), hydrogen sulfide (H₂S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM ₁₀	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	18.6	18.6	NOx - Nitrogen Oxides
СО	1.7	1.7	CO - Carbon Monoxide VOC - Volatile Organic Compound
voc	8.4	8.4	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (l) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input,
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code:</u> North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#\$1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard Industrial Classification Code</u> (http://www.osha.gov/pls/imis/sic_manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. County: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
- 2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
- 3. <u>Source Contact</u>: The source contact must be the local contact authorized to receive requests for data and information.
- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. Allowable Emissions (See also, Potential to Emit): Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. Potential to Emit: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. Actual Emissions: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The Morgan States Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. All engines were manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ and, therefore, the engines are not subject to the requirements of this subpart.

Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	าาาา	ZZZZ
MGS-1	Gas	1265	Caterpillar	G3516 TALE	03RC01191	5/8/1996	5/17/2007	No	Area

Emission Sources

Current emitting sources onsite include:

- MGS-1 Caterpillar G3516 TALE gas compressor driver engine
- Two mixed liquids storage tanks and associated liquid tank truck loading
- One natural gas fired line heater

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NOx) from the Caterpillar engine. Additionally, the Caterpillar engine is equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH2O).

Federally Enforceable Requirements

Kerr-McGee Consent Decree signed in 2007 required the existing engine at the Morgan States Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. Therefore, the CO control requirements are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

Uncontrolled Emissions											
Unit ID	Description	NOx	CO	VOC	PM10						
MGS 1	G3516TALE	18.3	22.0	4.0	0.00						
HTR-1	Heater	0.2	0.2	Insig.	-						
TK-1, 2	Storage Tanks	-	-	5.2	-						
L-1	Truck Loading	-	-	0.2	-						
	Total	18.6	22.2	9.4	0.0						

PTE Emissions (TPY)										
Unit ID	Description	NOx	CO	VOC	PM10					
MGS 1	G3516TALE	18.3	1.5	3.0	0.0					
HTR-1	Heater	0.2	0.2	Insig.	-					
TK-1	Storage Tanks	-	-	5.2	-					
L-1	Truck Loading	-	-	0.2	-					
	Total	18.6	1.7	8.4	0.0					

Emission Calculations

Morgan States Compressor Station **Engine Detail Sheet**

Source ID Number

MGS 1

Source Description

4-Cycle Lean Burn

Engine Usage Engine Make

Compressor Engine Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3516TALE

Serial Number

Manufacture Date

5/8/1996

Date in Service

03RC01191 5/17/2007

Potential fuel usage

90.8 MMscf/yr

10365 scf/hr

Emission Controls

Lean Burn

Oxidation Catalyst/AFR

Engine Rating

1265 BHP

Fuel Heating Value

905.0 Btu/scf

Heat Rate Engine Heat Rate

9.38 MMBtu/hr 7415 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission Factor Rating Operating Hrs Estimated Emissions		Source of Emission				
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1265	8760	4.18	18.3	Manuf. Data
CO	0.54	1.80	1265	8760	5.02	22.0	Manuf. Data
VOC	0.10	0.33	1265	8760	0.92	4.0	Manuf. Data
SOx	5.88E-04	0.002	1265	8760	0.01	0.02	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs					1	3.63	
НСНО	0.07	0.25	1265	8760	0.70	3.05	Manuf. Data
Benzene	4.40E-04	0.0015	1265	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1265	8760	0.048	0.21	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1265	8760	0.078	0.34	AP-42, Table 3.2-2

Pollutant	Emission Factor		Emission Factor Rating Operating Hrs Estimated Emissions		Source of Emission		
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1265	8760	4.18	18.3	Manuf. Data
CO*	0.04	0.13	1265	8760	0.35	1.5	Manuf. Control Data
VOC*	0.07	0.25	1265	8760	0.69	3.0	Manuf. Control Data
SOx	5.88E-04	0.002	1265	8760	0.01	0.02	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						1.31	
НСНО*	0.02	0.06	1265	8760	0.17	0.73	Manuf. Control Data
Benzene	4.40E-04	0.0015	1265	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1265	8760	0.048	0.21	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1265	8760	0.078	0.34	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

Basis

Annual Average Gas Production:

10.3 MMSCFD

Annual Average Crude Production:

12.9 BOPD

Condensate Storage Emission Estimates

Storage Tank Emission Factor*:

0.5 TPY VOC/MMSCFD

Uncontrolled Storage Tank VOC Emissions:

5.16 TPY

"Emission factor derived from known production rates.

Condensate Loading Emission Estimates

Truck Loading Equation:

$$L = 12.46 \frac{\text{SPM}}{T}$$
 (from AP-42, section 5.2, equation 1)

Calculation Variables:

- L loading loss (lbs/1,000 gal)
- S saturation factor

0.60 (from AP-42, Table 5.2-1, submerged loading)

- P true vapor pressure of liquid loaded at bulk liquid temperature (psia) 2.60 (estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)
- M molecular weight of vapor (lb/lb-mole)

50.00 (from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

L = 1.89 lbs/1,000 gal loaded

Truck Loading VOC Emissions 0.19 TPY Requested

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OMB Control No. 2060-0003 Approval expires 04/30/2012



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Miner NCD Desmit Coordinator	The Tribal Environmental Contact for the specific
Federal Minor NSR Permit Coordinator	The Thoat Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriate
	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.epa.gov/region08/air/permitting/tmnsr.html	

A. GENERAL SOURCE INFORMATION

A. GENERAL SOURCE INFORMATION						
1. Company Name		2. Source Name				
Anadarko Uintah Midstream, LL	С	North East Compressor Sta	ition			
3. Type of Operation		4. Portable Source?	Yes No V			
Natural Gas Compression		5. Temporary Source?	Yes ☐ No ✓			
6. NAICS Code		7. SIC Code				
211111		1311				
8. Physical Address (home bas	e for portable sources)					
•	=					
Remote Location near Ouray, U	lan					
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*			
Uinta and Ouray	Uintah	40.051840	-109.541273			
-						
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*			
SE NW	10	98	21E			

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address PO BOX173779, Denver, CO 80217		
Email Address		
Telephone Number	Facsimile Number	
2. Operator Name (if different from owner)	T	itle
Same As Owner		
Mailing Address		
Email Address		
Telephone Number	Facsimile Number	
2 5	l T	1.1
3. Source Contact	1	itle
Clayton Rimer		ntie enior Maintenance Foreman
Clayton Rimer		
Clayton Rimer Mailing Address		
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078		
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address		
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com	S	
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number	S	
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton Rimer@anadarko.com Telephone Number 435-781-7033	Facsimile Number	enior Maintenance Foreman
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact	Facsimile Number Title	enior Maintenance Foreman
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C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compound (VOC), lead (PO) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (PO), hydrogen sulfide (PO), total reduced sulfur (PO) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM_{10}	.0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	· N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	38.0	38.0	NOx - Nitrogen Oxides CO - Carbon Monoxide
CO	3.4	3.4	VOC - Volatile Organic Compound
VOC	16.6	16.6	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
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- (d) Primary zinc smelters;
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- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (l) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
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- (q) Fuel conversion plants;

- (r) Sintering plants;
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- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input, and
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code</u>: North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard</u> Industrial Classification Code (http://www.osha.gov/pls/imis/sic manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. County: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
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- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. <u>Allowable Emissions (See also, Potential to Emit)</u>: Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. Potential to Emit: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. <u>Actual Emissions</u>: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The North East Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. All engines were manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ and, therefore, the engines are not subject to the requirements of this subpart.

Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	JJJJ	ZZZZ
NOE 1	Gas	1265	Caterpillar	G3516 TALE	3RC01190	5/8/1996	Pre 2007	No	Area
NOE 2	Gas	1340	Caterpillar	G3516 TALE	4EK04722	9/2/2005	2/10/2006	No	Area

Emission Sources

Current emitting sources onsite include:

- NOE 1, NOE 2 Caterpillar G3516TALE compressor driver engines
- Three mixed liquids storage tanks and associated liquid tank truck loading
- One natural gas fired line heater

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NO_X) from the Caterpillar G3516 TALE, engines. Additionally, the engines are equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH₂O).

Federally Enforceable Requirements

Kerr-McGee Consent Decree signed in 2007 required the existing engines at the North East Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. The Consent Decree also requires that any new lean-burn engines at the North East Compressor Station to be equipped with an oxidation catalyst meeting the same requirements. Therefore, the CO control requirements are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

Uncontrolled Emissions							
Unit ID	Description	NOx	СО	VOC	PM ₁₀		
NOE 1	G3516TALE	18.3	22.0	4.0	0.00		
NOE 2	G3516TALE	19.4	23.3	4.3	0.00		
HTR-1	Heater	0.3	0.2	Insig.	-		
TK1-3	Storage Tanks	-	-	10.0	-		
L-1	Tank Truck Loading		-	0.4	_		
	Total	38.0	45.5	18.7	0.0		

PTE Emissions (TPY)							
Unit ID	Description	NOx	CO	VOC	PM ₁₀		
NOE 1	G3516TALE	18.3	1.5	3.0	0.0		
NOE 2	G3516TALE	19.4	1.6	3.2	0.0		
HTR-1	Heater	0.3	0.2	Insig.	-		
TK1-3	Storage Tanks	-		10.0	-		
L-1	Tank Truck Loading			0.4	_		
	Total	38.0	3.4	16.6	0.0		

North Est Compressor Station

Engine Detail Sheet

Source ID Number	NOE 1		
Source Description	4-Cycle Lean Burn		
Engine Usage	Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3516TALE	•	
Serial Number	3RC01190	Manufacture Date	5/8/1996
Date in Service	Pre 2007	Potential fuel usage	90.8 MMscf/yr
Emission Controls	Lean Burn		10365 scf/hr
	Oxidation Catalyst/AFR		
	•	Stack ID	NOE 1
Engine Rating	1265 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0 ft
Heat Rate	9.38 MMBtu/hr	Exit Velocity	135.8 ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840 deg F
-	•	Volume Flow Rate	6.390 ft ³ /min

Uncontrolled Emissions

Pollutant	Emission Factor Estimated Emission		Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor			
NOx	0.45	1.50	4.18	18.3	Manuf. Data			
CO	0.54	1.80	5.02	22.0	Manuf. Data			
VOC	0.10	0.33	0.92	4.0	Manuf. Data			
SOx	5.88E-04	0.002	0.01	0.02	AP-42, Table 3.2-2			
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2			
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2			
HAPs			0.83	3.63		lb/yr		
HCHO	0.07	0.25	0.70	3.05	Manuf. Data	6107.6		
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	36.2		
Acrolein	5.14E-03	0.0173	0.05	0.21	AP-42, Table 3.2-2	422.4		
Acetaldehyde	8.36E-03	0.0281	0.08	0.34	AP-42, Table 3.2-2	686.9		

Pollutant	Emission Factor		Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.18	18.3	Manuf. Data	
CO*	0.04	0.13	0.35	1.5	Manuf. Control Data	
VOC*	0.07	0.25	0.69	3.0	Manuf. Control Data	
SOx	5.88E-04	0.002	0.01	0.02	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.30	1.31		lb/yr
HCHO*	0.02	0.06	0.17	0.73	Manuf. Control Data	1465.8
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	36.2
Acrolein	5.14E-03	0.0173	0.05	0.21	AP-42, Table 3.2-2	422.4
Acetaldehyde	8.36E-03	0.0281	0.08	0.34	AP-42, Table 3.2-2	686.9

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

North ExtiCompressor Setting

Engine Detail Sheet

Source ID Number Source Description Engine Usage	NOE 2 4-Cycle Lean Burn Compressor Engine		
Engine Make	Caterpillar	Potential operation	8760 hr/yr
Engine Model	G3516TALE		
Serial Number	4EK04722	Manufacture Date	9/2/2005
Date in Service	2/10/2006	Potential fuel usage	96.2 MMscf/yr
Emission Controls	Lean Burn		10979 scf/hr
	Oxidation Catalyst/AFR		
		Stack ID	NOE 2
Engine Rating	1340 BHP	Stack Height	ft
Fuel Heating Value	905.0 Btu/scf	Stack Diameter	1.0 ft
Heat Rate	9.94 MMBtu/hr	Exit Velocity	135.8 ft/s
Engine Heat Rate	7415 Btu/hp-hr	Exit Temperature	840 deg F
		Volume Flow Rate	6,390 ft ³ /min

Uncontrolled Emissions

Checker of the Chinistra								
Pollutant	Emission Factor		Estimate	ed Emissions	Source of Emission			
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor			
NOx	0.45	1.50	4.43	19.4	Manuf. Data	_		
CO	0.54	1.80	5.32	23.3	Manuf. Data			
VOC	0.10	0.33	0.97	4.3	Manuf. Data			
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2			
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2			
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2			
HAPs			0.88	3.84		lb/yr		
HCHO	0.07	0.25	0.74	3.23	Manuf. Data	6469.7		
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	38.3		
Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447.4		
Acetaldehyde	8.36E-03	0.0281	0.08	0.36	AP-42, Table 3.2-2	727.7		

Pollutant	Emission	n Factor	Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	4.43	19.4	Manuf. Data	-
CO*	0.04	0.13	0.37	1.6	Manuf. Control Data	
VOC*	0.07	0.25	0.73	3.2	Manuf. Control Data	
SOx	5.88E-04	0.002	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	0.00	0.00	AP-42, Table 3.2-2	
HAPs			0.32	1.38		lb/yr
HCHO*	0.02	0.06	0.18	0.78	Manuf. Control Data	1552.7
Benzene	4.40E-04	0.0015	0.00	0.02	AP-42, Table 3.2-2	38.3
Acrolein	5.14E-03	0.0173	0.05	0.22	AP-42, Table 3.2-2	447.4
Acetaldehyde	8.36E-03	0.0281	0.08	0.36	AP-42, Table 3.2-2	727.7

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficency; Formaldehyde: 76% Control Efficiency

^{*}Blue values are entered

Basis

Annual Average Gas Production:

20.1 MMSCFD

Annual Average Crude Production:

BOPD

Condensate Storage Emission Estimates

Storage Tank Emission Factor*:

0.5 TPY VOC/MMSCFD

Storage Tank VOC Emissions

10.03

25.1

TPY Requested

*Emission factor derived from known production rates.

Condensate Loading Emission Estimates

Truck Loading Equation:

$$L = 12.46 \frac{\text{SPM}}{T} \text{ (from AP-42, section 5.2, equation 1)}$$

Calculation Variables:

L loading loss (lbs/1,000 gal)

S saturation factor

0.60 (from

(from AP-42, Table 5.2-1, submerged loading)

P true vapor pressure of liquid loaded at bulk liquid temperature (psia)

2.60 (estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)

M molecular weight of vapor (lb/lb-mole)

50.00 (from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

L = 1.89 lbs/1,000 gal loaded

Truck Loading VOC Emissions 0.36 TPY Requested



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriate
	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.ena.gov/region08/air/nermitting/tmnsr.html	

A. GENERAL SOURCE INFORMATION

1. Company Name		2. Source Name				
Anadarko Uintah Midstream, LL	С	Sage Grouse Compressor Station				
3. Type of Operation		4. Portable Source?	Yes No 🗸			
Natural Gas Compression		5. Temporary Source?	Yes No ✓			
6. NAICS Code		7. SIC Code				
211111		1311				
8. Physical Address (home bas Remote Location near Ouray, U	=					
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*			
Uinta and Ouray	Uintah	39° 54' 13.57" N	109° 28' 14.81" W			
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*			
NW SW	32	10S	22E			

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address PO BOX173779, Denver, CO 80217		
Email Address		
Telephone Number	Facsimile Number	
2. Operator Name (if different from owner)		Title
Same As Owner		
Mailing Address		
Email Address		
Telephone Number	Facsimile Number	
3. Source Contact		Title
Di Bource Commer		
Clayton Rimer		Senior Maintenance Foreman
Clayton Rimer		
Clayton Rimer Mailing Address		
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078		
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address	Facsimile Number	
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com		
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number		
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033	Facsimile Number	Senior Maintenance Foreman
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact	Facsimile Number	Senior Maintenance Foreman
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier	Facsimile Number	Senior Maintenance Foreman
Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier Mailing Address	Facsimile Number	Senior Maintenance Foreman
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Clayton Rimer Mailing Address 1368 S 1200 E, Vernal, UT 84078 Email Address Clayton.Rimer@anadarko.com Telephone Number 435-781-7033 4. Compliance Contact Chad Schlichtemeier Mailing Address PO BOX 173779, Denver, CO 80217 Email Address	Facsimile Number	Senior Maintenance Foreman

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compound (VOC), lead (PO) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (PO), hydrogen sulfide (PO), total reduced sulfur (PO) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM ₁₀	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	83.1	83.1	NOx - Nitrogen Oxides
CO	6.9	6.9	CO - Carbon Monoxide VOC - Volatile Organic Compound
VOC	18.5	18.5	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (1) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input, and
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code:</u> North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard Industrial Classification Code</u> (http://www.osha.gov/pls/imis/sic_manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. County: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
- 2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
- 3. Source Contact: The source contact must be the local contact authorized to receive requests for data and information.
- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. <u>Allowable Emissions (See also, Potential to Emit)</u>: Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. <u>Potential to Emit</u>: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. <u>Actual Emissions</u>: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The Sage Grouse Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. The two engines on site were manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ and, therefore, the engines are not subject to the requirements of this subpart.

Unit Name	Engi	Site				Manufacture	Startup		
·	ne	HP	Make	Model	Serial #	Date	Date	JJJJ	ZZZZ
	Type								
SGG 1	Gas	1340	Caterpillar	G3516 TALE	4EK04758	9/27/2005	3/13/2006	No	Yes
SGG 2	Gas	1340	Caterpillar	G3516 TALE	4EK05096	4/7/2006	9/10/2006	No	Yes
SGG 3	Gas	1340	Caterpillar	G3516 TALE	WPW00300	7/13/2006	1/24/2008	No	Yes
SGG GEN-1	Gas	637	Caterpillar	G3412LE	CTP02721	4/19/2007	6/22/2009	No	Yes
SGG GEN-2	Gas	637	Caterpillar	G3412LE	CTP02708	3/6/2007	10/5/2010	No	Yes

Emission Sources

Current emitting sources onsite include:

- SGG 1, SGG 2, and SGG 3 Caterpillar G3516TALE compressor driver engines
- SGG GEN-1 and SGG GEN-2 Caterpillar G3412LE generator driver engines
- Three mixed liquids storage tanks and associated liquid tank truck loading
- · One natural gas fired line heater

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NOx) from the Caterpillar engines. Additionally, each of the engines is equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH2O).

Federally Enforceable Requirements

The Kerr-McGee Consent Decree signed in 2007 required the existing engines at the Sage Grouse Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. The Consent Decree also requires that any new lean-burn engines at the Sage Grouse Compressor Station be equipped with an oxidation catalyst meeting the same requirements. Therefore, the CO control requirements on all of the engines at Sage Grouse are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

The 2007 Consent Decree also requires that dehydration unit emissions be controlled to a maximum of 1 tpy VOC making such requirements federally enforceable. HAP pollutants are controlled in conjunction with the VOC emissions. The HAP emissions would also be an enforceable condition as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

Sage Grouse Compressor

Facility: Station

Location: S32 T10S R22E NWSW

Uncontrolled Emissions (TPY)											
Unit ID	Description	HR/YR	NOx	CO	VOC	PM10					
SGG 1	G3516TALE	8760	19.4	24.1	4.3	0.0					
SGG 2	G3516TALE	8760	19.4	24.1	4.3	0.0					
SGG 3	G3516TALE	8760	19.4	24.1	4.3	0.0					
SGG GEN-1	G3412LE	8760	12.3	12.1	2.0	0.0					
SGG GEN-2	G3412LE	8760	12.3	12.1	2.0	0.0					
HTR-1	Heater	8760	0.3	0.2	Insig.	-					
TK-1	Tank Battery	8760		-	5.8	-					
L-1	Tank Truck Loading	•	_	0.2	-						
	Total		83.1	96.6	22.7	0.0					

PTE Emissions (TPY)												
Unit ID	Description	NOx	CO	VOC	PM10							
SGG 1	G3516TALE	8760	19.4	1.7	3.2	0.0						
SGG 2	G3516TALE	8760	19.4	1.7	3.2	0.0						
SGG 3	G3516TALE	8760	19.4	1.7	3.2	0.0						
SGG GEN-1	G3412LE	8760	12.3	0.8	1.5	0.0						
SGG GEN-2	G3412LE	8760	12.3	0.8	1.5	0.0						
HTR-1	Heater	8760	0.3	0.2	Insig.	-						
TK-1	Tank Battery	8760	-	-	5.8	-						
L-1	Tank Truck Loading	-	-	0.2	-							
	Total		83.1	6.9	18.5	0.0						

Emission Calculations

StgeCongerous Station

Engine Detail Sheet

Source ID Number

SGG 1

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3516TALE

Serial Number

04EK04758

Manufacture Date

9/27/2005

Date in Service

3/13/2006

Potential fuel usage

96.2 MMscf/yr 10979 scf/hr

Emission Controls

Lean Burn

Oridation Catalyna/AE

D

Oxidation Catalyst/AFR

Engine Rating

1340 BHP

Fuel Heating Value

905.0 Btu/scf

Heat Rate

9.94 MMBtu/hr

Engine Heat Rate

7415 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission Factor Ratin		Rating	ing Operating Hrs Estimated Emissions			Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO	0.55	1.86	1340	8760	5.49	24.1	Manuf. Data
VOC	0.10	0.33	1340	8760	0.97	4.3	Manuf. Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						4.36	
HCHO	0.09	0.29	1340	8760	0.86	3.75	Manuf. Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

Pollutant	Emission	n Factor	Rating	Operating Hrs	Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO*	0.04	0.13	1340	8760	0.38	1.7	Manuf. Control Data
VOC*	0.07	0.25	1340	8760	0.73	3.2	Manuf. Control Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						1.51	
HCHO*	0.02	0.07	1340	8760	0.21	0.90	Manuf. Control Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficency; Formaldehyde: 76% Control Efficiency

Sege@oute@out.excorStation

Engine Detail Sheet

Source ID Number

SGG 2

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3516TALE

Manufacture Date

4/7/2006

Serial Number Date in Service 4EK05096

9/10/2006

Potential fuel usage

96.2 MMscf/yr

Emission Controls

Lean Burn

10979 scf/hr

Engine Rating Fuel Heating Value 1340 BHP

Oxidation Catalyst/AFR

905.0 Btu/scf

Heat Rate

9.94 MMBtu/hr

Engine Heat Rate

7415 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission	ı Factor	Rating	Operating Hrs	Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO	0.55	1.86	1340	8760	5.49	24.1	Manuf. Data
VOC	0.10	0.33	1340	8760	0.97	4.3	Manuf. Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						4.36	
НСНО	0.09	0.29	1340	8760	0.86	3.75	Manuf. Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

Pollutant	Emission	Factor	Rating	Operating Hrs	Estimated	Emissions	Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO*	0.04	0.13	1340	8760	0.38	1.7	Manuf. Control Data
VOC*	0.07	0.25	1340	8760	0.73	3.2	Manuf. Control Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						1.51	
HCHO*	0.02	0.07	1340	8760	0.21	0.90	Manuf. Control Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficency; Formaldehyde: 76% Control Efficiency

India Recorption Serior Depth

Engine Detail Sheet

Source ID Number

SGG3

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3516TALE

WPW00300

Manufacture Date

7/13/2006

Serial Number Date in Service

1/24/2008

Potential fuel usage

96.2 MMscf/yr

Lean Burn

10979 scf/hr

Emission Controls

Oxidation Catalyst/AFR

Engine Rating

1340 BHP

Fuel Heating Value

905.0 Btu/scf 9.94 MMBtu/hr

Heat Rate Engine Heat Rate

7415 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission Factor		Rating Operating Hrs		Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO	0.55	1.86	1340	8760	5.49	24.1	Manuf. Data
VOC	0.10	0.33	1340	8760	0.97	4.3	Manuf. Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						4.36	
HCHO	0.09	0.29	1340	8760	0.86	3.75	Manuf. Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

Pollutant	Emission	n Factor	Rating	Operating Hrs	Estimated	Emissions	Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO*	0.04	0.13	1340	8760	0.38	1.7	Manuf. Control Data
VOC*	0.07	0.25	1340	8760	0.73	3.2	Manuf. Control Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						1.51	
HCHO*	0.02	0.07	1340	8760	0.21	0.90	Manuf. Control Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficency; Formaldehyde: 76% Control Efficiency

Sage Chouse Compressor Staffon

Engine Detail Sheet

Source ID Number

SGG GEN-1

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3412LE

Manufacture Date

4/19/2007

Serial Number Date in Service CTP02721

Potential fuel usage

48.0 MMscf/yr

6/22/2009

Emission Controls

Lean Burn

5478 scf/hr

Oxidation Catalyst/AFR

Engine Rating

637 BHP

Fuel Heating Value

905.0 Btu/scf

Heat Rate **Engine Heat Rate**

4.96 MMBtu/hr 7783 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission	n Factor	Rating	Operating Hrs	Estimate	d Emissions	Source of Emission
Tonutunt	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.57	2.00	637	8760	2.81	12.3	Manuf. Data
CO	0.56	1.97	637	8760	2.77	12.1	Manuf. Data
VOC	0.09	0.32	637	8760	0.45	2.0	Manuf. Data
SOx	5.88E-04	0.002	637	8760	0.00	0.01	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	637	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	637	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						2.09	
HCHO	0.08	0.29	637	8760	0.41	1.78	Manuf. Data
Benzene	4.40E-04	0.0016	637	8760	0.002	0.01	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0181	637	8760	0.025	0.11	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0295	637	8760	0.041	0.18	AP-42, Table 3.2-2

Pollutant	Emission	Emission Factor Rating Operating Hrs Estimated Emissions		Source of Emission			
Tonatant	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.57	2.00	637	8760	2.81	12.3	Manuf. Data
CO*	0.04	0.14	637	8760	0.19	0.8	Manuf. Control Data
VOC*	0.07	0.24	637	8760	0.34	1.5	Manuf. Control Data
SOx	5.88E-04	0.002	637	8760	0.00	0.01	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	637	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	637	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						0.73	
HCHO*	0.02	0.07	637	8760	0.10	0.43	Manuf. Control Data
Benzene	4.40E-04	0.0016	637	8760	0.002	0.01	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0181	637	8760	0.025	0.11	AP-42, Table 3.2-2
Acetaldehvde	8.36E-03	0.0295	637	8760	0.041	0.18	AP-42. Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficency; Formaldehyde: 76% Control Efficiency

Sege Composent Strifon

Engine Detail Sheet

Source ID Number

SGG GEN-2

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3412LE

Manufacture Date

3/6/2007

Serial Number Date in Service CTP02708

48.0 MMscf/yr

10/5/2010

Potential fuel usage

5478 scf/hr

Emission Controls

Lean Burn

Oxidation Catalyst/AFR

Engine Rating

637 BHP

Fuel Heating Value

905.0 Btu/scf

Heat Rate

4.96 MMBtu/hr

Engine Heat Rate

7783 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission	n Factor	Rating	Operating Hrs	Estimated l	Emissions	Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.57	2.00	637	8760	2.81	12.3	Manuf. Data
CO	0.56	1.97	637	8760	2.77	12.1	Manuf. Data
VOC	0.09	0.32	637	8760	0.45	2.0	Manuf. Data
SOx	5.88E-04	0.002	637	8760	0.00	0.01	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	637	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	637	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						2.09	
НСНО	0.08	0.29	637	8760	0.41	1.78	Manuf. Data
Benzene	4.40E-04	0.0016	637	8760	0.002	0.01	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0181	637	8760	0.025	0.11	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0295	637	8760	0.041	0.18	AP-42, Table 3.2-2

Pollutant	Emission Factor		Emission Factor Rating Operating		Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.57	2.00	637	8760	2.81	12.3	Manuf. Data
CO*	0.04	0.14	637	8760	0.19	0.8	Manuf. Control Data
VOC*	0.07	0.24	637	8760	0.34	1.5	Manuf. Control Data
SOx	5.88E-04	0.002	637	8760	0.00	0.01	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	637	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	637	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						0.73	
HCHO*	0.02	0.07	637	8760	0.10	0.43	Manuf. Control Data
Benzene	4.40E-04	0.0016	637	8760	0.002	0.01	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0181	637	8760	0.025	0.11	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0295	637	8760	0.041	0.18	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficency; Formaldehyde: 76% Control Efficiency

Sage Grouse Tank and Loading Emission Calculations

Basis

Annual Average Gas Production:

11.5 MMSCFD

Annual Average Crude Production:

14.4 BOPD

Condensate Storage Emission Estimates

Storage Tank Emission Factor*:

0.5

TPY VOC/MMSCFD

Storage Tank VOC Emissions

5.75

TPY Requested

*Emission factor derived from known production rates.

Condensate Loading Emission Estimates

Truck Loading Equation:

$$L = 12.46 \frac{SPM}{T}$$
 (from AP-42, section 5.2, equation 1)

Calculation Variables:

- L loading loss (lbs/1,000 gal)
- S saturation factor

0.60 (from AP-42, Table 5.2-1, submerged loading)

- P true vapor pressure of liquid loaded at bulk liquid temperature (psia)
 2.60 (estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)
- M molecular weight of vapor (lb/lb-mole)

50.00 (from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

L = 1.89 lbs/1,000 gal loaded

Truck Loading VOC Emissions 0.21 TPY Requested

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriate
	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.ena.gov/region08/air/nermitting/tmnsr.html	

A. GENERAL SOURCE INFORMATION

A. GENERAL SOURCE II	NEURWIATION				
1. Company Name		2. Source Name			
Anadarko Uintah Midstream, LL	С	South Compressor Station			
3. Type of Operation		4. Portable Source?	Yes No 🗸		
Natural Gas Compression		5. Temporary Source?	Yes ∐ No ✓		
6. NAICS Code		7. SIC Code			
211111		1311			
8. Physical Address (home bas	e for portable sources)				
Remote Location near Ouray, U	tah				
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*		
Uinta and Ouray	Uintah	39° 56' 56.77" N	109° 33' 11.00" W		
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*		
SW NE	16	10S	21E		

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address		
PO BOX173779, Denver, CO 80217		· · · · · · · · · · · · · · · · · · ·
Email Address		
Telephone Number	Facsimile Number	
Telephone Number	Pacsinine Number	
2 Operator Name (if different from overa)		Title
2. Operator Name (if different from owner)		Title
Same As Owner		
Mailing Address		
Email Address		
Telephone Number	Facsimile Number	·
3. Source Contact		Title
Clayton Rimer		Senior Maintenance Foreman
Mailing Address		
1368 S 1200 E, Vernal, UT 84078		
Email Address		
Clayton.Rimer@anadarko.com		
Telephone Number	Facsimile Number	
435-781-7033		
4. Compliance Contact	Title	and the second s
Chad Schlichtemeier	Senior Staff EHS Repr	resentative
Mailing Address	·····	
PO BOX 173779, Denver, CO 80217		
Email Address		A THE STATE OF THE
Chad.Schlichtemeier@anadarko.com		
Telephone Number	Facsimile Number	
720-929-6867	720-929-7105	

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SO_x) , nitrogen oxides (NO_x) , carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4) , hydrogen sulfide (H_2S) , total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM ₁₀	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	75.7	75.7	NOx - Nitrogen Oxides CO - Carbon Monoxide
CO	6.5	6.5	VOC - Volatile Organic Compound
VOC	27.9	27.9	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (1) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input,
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code</u>: North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard Industrial Classification Code</u> (http://www.osha.gov/pls/imis/sic_manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. County: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
- 2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
- 3. <u>Source Contact</u>: The source contact must be the local contact authorized to receive requests for data and information.
- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. Allowable Emissions (See also, Potential to Emit): Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. <u>Potential to Emit</u>: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. Actual Emissions: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The South Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. The two engines on site were manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ and, therefore, the engines are not subject to the requirements of this subpart.

Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	JJJJ	ZZZZ
STH 1	Gas	1265	Caterpillar	G3516 TALE	03RC01188	5/3/1996	5/17/2007	No	Yes
STH 2	Gas	1340	Caterpillar	G3516 TALE	WPW01668	9/19/2007	5/1/2008	No	Yes
STH 3	Gas	1340	Caterpillar	G3516 TALE	4EK02363	12/9/1998	3/11/2011	No	Yes
STH 4	Gas	1265	Caterpillar	G3516 TALE	4EK01191	12/13/1996	6/28/2011	No	Yes

Emission Sources

Current emitting sources onsite include:

- STH 1, STH 2, STH 3, and STH 4 Caterpillar G3516TALE compressor driver engines
- Three mixed liquids storage tanks and associated liquid tank truck loading
- One natural gas fired line heater

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NOx) from the Caterpillar engines. Additionally, each of the engines is equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH2O).

Federally Enforceable Requirements

The Kerr-McGee Consent Decree signed in 2007 required the existing engines at the South Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. The Consent Decree also requires that any new lean-burn engines at the South Compressor Station be equipped with an oxidation catalyst meeting the same requirements. Therefore, the CO control requirements on all of the engines at South are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

The 2007 Consent Decree also requires that dehydration unit emissions be controlled to a maximum of 1 tpy VOC making such requirements federally enforceable. HAP pollutants are controlled in conjunction with the VOC emissions. The HAP emissions would also be an enforceable condition as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

Facility: South Compressor Station **Location:** S16 T10S R21E SWNE

Uncontrolled Emissions (TPY) Unit ID Description HR/YR **NOx** CO VOC PM10 STH 1 8760 G3516TALE 18.3 22.0 4.0 0.00 STH 2 G3516TALE 8760 19.4 23.3 4.3 0.00 STH 3 G3516TALE 8760 19.4 23.3 4.3 0.00 STH 4 8760 G3516TALE 18.3 22.0 4.0 0.00 HTR-1 Line Heater 8760 0.3 0.2 Insig. TK-1 Tank Battery 8760 15.7 L-1 Tank Truck Loading ---0.6 Total 75.7 90.7 32.9 0.0

	PTE Emissions (TPY)									
Unit ID	Description	HR/YR	NOx	СО	VOC	PM10				
STH 1	G3516TALE	8760	18.3	1.5	2.8	0.0				
STH 2	G3516TALE	8760	19.4	1.6	3.0	0.0				
STH 3	G3516TALE	8760	19.4	1.6	3.0	0.0				
STH 4	G3516TALE	8760	18.3	1.5	2.8	0.0				
HTR-1	Line Heater	8760	0.3	0.2	Insig.	-				
TK-1	Tank Battery	8760	•	-	15.7	-				
L-1	Tank Truck Loading		-	_	0.6	-				
	Total		75.7	6.5	27.9	0.0				

Emission Calculations

South Compressor Station

Engine Detail Sheet

Source ID Number

STH1

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine Caterpillar

Potential operation

8760 hr/yr

Engine Make Engine Model

G3516TALE

Manufacture Date

5/3/1996

Serial Number Date in Service 03RC01188

Potential fuel usage

68.5 MMscf/yr

5/17/2007

7817 scf/hr

Emission Controls

Lean Burn

Oxidation Catalyst/AFR

Engine Rating

1265 BHP

Fuel Heating Value

1200.0 Btu/scf

Heat Rate

9.38 MMBtu/hr

Engine Heat Rate

7415 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission Factor		Rating	Operating Hrs	Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1265	8760	4.18	18.3	Manuf. Data
CO	0.54	1.80	1265	8760	5.02	22.0	Manuf. Data
VOC	0.10	0.33	1265	8760	0.92	4.0	Manuf. Data
SOx	5.88E-04	0.002	1265	8760	0.01	0.02	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						3.63	
HCHO	0.07	0.25	1265	8760	0.70	3.05	Manuf. Data
Benzene	4.40E-04	0.0015	1265	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1265	8760	0.048	0.21	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1265	8760	0.078	0.34	AP-42, Table 3.2-2

TIEEMISSIONS							Source of Emission
Pollutant	Emission Factor		Rating	Operating Hrs Estimated Emissio		Emissions	
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1265	8760	4.18	18.3	Manuf. Data
CO*	0.04	0.13	1265	8760	0.35	1.5	Manuf. Control Data
VOC*	0.07	0.23	1265	8760	0.64	2.8	Manuf. Control Data
SOx	5.88E-04	0.002	1265	8760	0.01	0.02	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						1.31	
НСНО*	0.02	0.06	1265	8760	0.17	0.73	Manuf. Control Data
Benzene	4.40E-04	0.0015	1265	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1265	8760	0.048	0.21	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1265	8760	0.078	0.34	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 93% Control Efficiency; Formaldehyde: 76% Control Efficiency

South Companion Section

Engine Detail Sheet

Source ID Number

STH2

Source Description

4-Cycle Lean Burn

Engine Usage Engine Make Compressor Engine

E ' Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model Serial Number G3516TALE

WPW01668

Manufacture Date

9/19/2007

Date in Service

5/1/2008

Potential fuel usage

72.5 MMscf/yr

Emission Controls

Lean Burn

8280 scf/hr

Engine Rating
Fuel Heating Value

1340 BHP 1200.0 Btu/scf 9.94 MMBtu/hr 7415 Btu/hp-hr

Oxidation Catalyst/AFR

Heat Rate Engine Heat Rate

Uncontrolled Emissions

Pollutant	Emission Factor		Rating	Operating Hrs	Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO	0.54	1.80	1340	8760	5.32	23.3	Manuf. Data
VOC	0.10	0.33	1340	8760	0.97	4.3	Manuf. Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						3.84	
HCHO	0.07	0.25	1340	8760	0.74	3.23	Manuf. Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

Pollutant	Emission Factor		Rating	Operating Hrs	Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO*	0.04	0.13	1340	8760	0.37	1.6	Manuf. Control Data
VOC*	0.07	0.23	1340	8760	0.68	3.0	Manuf. Control Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						1.38	
HCHO*	0.02	0.06	1340	8760	0.18	0.78	Manuf. Control Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VO C: 93% Control Efficiency; Formaldehyde: 76% Control Efficiency

South Compressor Station

Engine Detail Sheet

Source ID Number

STH3

Source Description Engine Usage

4-Cycle Lean Burn Compressor Engine

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3516TALE

4EK02363

Manufacture Date

12/9/1998

Serial Number Date in Service

3/11/2011

Potential fuel usage

72.5 MMscf/yr

8280 scf/hr

Emission Controls

Lean Burn

Oxidation Catalyst/AFR

Engine Rating

Engine Heat Rate

1340 BHP 1200.0 Btu/scf

Fuel Heating Value Heat Rate

9.94 MMBtu/hr 7415 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission Factor		Rating	Operating Hrs	Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO	0.54	1.80	1340	8760	5.32	23.3	Manuf. Data
VOC	0.10	0.33	1340	8760	0.97	4.3	Manuf. Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						3.84	
HCHO	0.07	0.25	1340	8760	0.74	3.23	Manuf. Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

Pollutant	Emission Factor		Rating	Operating Hrs	Estimated Emissions		Source of Emission	
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor	
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data	
CO*	0.04	0.13	1340	8760	0.37	1.6	Manuf. Control Data	
VOC*	0.07	0.23	1340	8760	0.68	3.0	Manuf. Control Data	
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2	
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2	
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2	
HAPs						1.38		
HCHO*	0.02	0.06	1340	8760	0.18	0.78	Manuf. Control Data	
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2	
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2	
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2	

^{*}CO: 93% Control Efficiency; VOC: 93% Control Efficiency; Formaldehyde: 76% Control Efficiency

South Compression Station

Engine Detail Sheet

Source ID Number

STH4

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model Serial Number

G3516TALE

Manufacture Date 4EK01191

12/13/1996

Date in Service

68.5 MMscf/yr

6/28/2011

Potential fuel usage

Emission Controls

Lean Burn

7817 scf/hr

Oxidation Catalyst/AFR

Engine Rating Fuel Heating Value

Engine Heat Rate

1265 BHP 1200.0 Btu/scf

Heat Rate

9.38 MMBtu/hr 7415 Btu/hp-hr

Uncontrolled Emissions

Uncontrolled Emissions									
Pollutant	Emission Factor		Rating	Operating Hrs	Estimated	Emissions	Source of Emission Factor		
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)			
NOx	0.45	1.50	1265	8760	4.18	18.3	Manuf. Data		
CO	0.54	1.80	1265	8760	5.02	22.0	Manuf. Data		
VOC	0.10	0.33	1265	8760	0.92	4.0	Manuf. Data		
SOx	5.88E-04	0.002	1265	8760	0.01	0.02	AP-42, Table 3.2-2		
PM10	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2		
PM2.5	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2		
HAPs						3.63			
HCHO	0.07	0.25	1265	8760	0.70	3.05	Manuf. Data		
Benzene	4.40E-04	0.0015	1265	8760	0.004	0.02	AP-42, Table 3.2-2		
Acrolein	5.14E-03	0.0173	1265	8760	0.048	0.21	AP-42, Table 3.2-2		
Acetaldehyde	8.36E-03	0.0281	1265	8760	0.078	0.34	AP-42, Table 3.2-2		

Pollutant	Emission Factor		Rating	Operating Hrs	Estimated Emissions		Source of Emission Factor
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	***
NOx	0.45	1.50	1265	8760	4.18	18.3	Manuf. Data
CO*	0.04	0.13	1265	8760	0.35	1.5	Manuf. Control Data
VOC*	0.07	0.23	1265	8760	0.64	2.8	Manuf. Control Data
SOx	5.88E-04	0.002	1265	8760	0.01	0.02	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						1.31	
HCHO*	0.02	0.06	1265	8760	0.17	0.73	Manuf. Control Data
Benzene	4.40E-04	0.0015	1265	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1265	8760	0.048	0.21	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1265	8760	0.078	0.34	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 93% Control Efficiency; Formaldehyde: 76% Control Efficiency

South Tank and Loading Emission Calculations

Basis

Annual Average Gas Production:

31.4 MMSCFD

Annual Average Crude Production:

39.3 BOPD

Condensate Storage Emission Estimates

Storage Tank Emission Factor*:

0.5 TPY VOC/MMSCFD

Storage Tank VOC Emissions 15.70 TPY Requested

*Emission factor derived from known production rates.

Condensate Loading Emission Estimates

Truck Loading Equation:

$$L = 12.46 \frac{\text{SPM}}{T}$$
 (from AP-42, section 5.2, equation 1)

Calculation Variables:

- L loading loss (lbs/1,000 gal)
- S saturation factor

0.60 (from AP-42, Table 5.2-1, submerged loading)

- P true vapor pressure of liquid loaded at bulk liquid temperature (psia) 2.60 (estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)
- M molecular weight of vapor (lb/lb-mole)

50.00 (from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

L = 1.89 lbs/1,000 gal loaded

Truck Loading VOC Emissions 0.57 TPY Requested



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriate
	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.ena.gov/region08/air/nermitting/tmnsr.html	

A. GENERAL SOURCE INFORMATION

1. Company Name		2. Source Name				
1. Company Name		2. Source Name				
Anadarko Uintah Midstream, LL	C	South East Compressor St.	ation			
Anadarko omtan Midstream, EL	C	South East Compressor Station				
3. Type of Operation		4. Portable Source?	Yes No ✓			
National Open Communication		5. Temporary Source?	Yes No 🗸			
Natural Gas Compression						
6. NAICS Code		7. SIC Code				
211111		1311				
8. Physical Address (home bas	e for nortable sources)					
•	-					
Remote Location near Ouray, U	tan					
			1			
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*			
Uinta and Ouray	Uintah	39° 58' 23.86" N	109° 26' 39.72" W			
	-					
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*			
SW SE	4	10S	22E			
						
		<u> </u>				

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address PO BOX173779, Denver, CO 80217		
Email Address		
Telephone Number	Facsimile Number	
2. Operator Name (if different from owner)		Title
Same As Owner		
Mailing Address		
5		
Email Address		
	•	
Telephone Number	Facsimile Number	
3. Source Contact		Title
Clayton Rimer		Senior Maintenance Foreman
Mailing Address		
1368 S 1200 E, Vernal, UT 84078		
Email Address		
Clayton.Rimer@anadarko.com		
Telephone Number	Facsimile Number	
435-781-7033		
4. Compliance Contact	Title	
Chad Schlichtemeier	Senior Staff EHS Repre	esentative
Mailing Address		
PO BOX 173779, Denver, CO 80217		
Email Address		
Chad.Schlichtemeier@anadarko.com		
Telephone Number	Facsimile Number	
720-929-6867	720-929-7105	

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM₁₀, PM_{2.5}, sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H₂SO₄), hydrogen sulfide (H₂S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM_{10}	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	38.0	38.0	NOx - Nitrogen Oxides CO - Carbon Monoxide
CO	3.3	3.3	VOC - Volatile Organic Compound
VOC	15.0	15.0	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (1) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input, and
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code</u>: North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard</u> Industrial Classification Code (http://www.osha.gov/pls/imis/sic manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. County: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
- 2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
- 3. <u>Source Contact</u>: The source contact must be the local contact authorized to receive requests for data and information.
- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. <u>Allowable Emissions (See also, Potential to Emit)</u>: Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. Potential to Emit: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. Actual Emissions: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The South East Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. The two engines on site were manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ and, therefore, the engines are not subject to the requirements of this subpart.

Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	JJJJ	ZZZZ
SOE 1	Gas	1265	Caterpillar	G3516 TALE	3RC01097	2/16/1995	5/17/2007	No	Yes
SOE 2	Gas	1340	Caterpillar	G3516 TALE	4EK04698	7/12/2005	2/10/2006	No	Yes

Emission Sources

Current emitting sources onsite include:

- SOE 1, SOE 2 Caterpillar G3516TALE compressor driver engines
- Two mixed liquids storage tanks and associated liquid tank truck loading
- One natural gas fired line heater

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NOx) from the Caterpillar engines. Additionally, each of the engines is equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH2O).

Federally Enforceable Requirements

The Kerr-McGee Consent Decree signed in 2007 required the existing engines at the South East Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. The Consent Decree also requires that any new lean-burn engines at the South East Compressor Station be equipped with an oxidation catalyst meeting the same requirements. Therefore, the CO control requirements on all of the engines at South East are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

The 2007 Consent Decree also requires that dehydration unit emissions be controlled to a maximum of 1 tpy VOC making such requirements federally enforceable. HAP pollutants are controlled in conjunction with the VOC emissions. The HAP emissions would also be an enforceable condition as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

South East Compressor

Facility: Station

Location: Section 4 T10S R22E SWSE

	Uncontrolle	d Emissio	ons (TPY	<i>(</i>)	-	•
Unit ID	Description	HR/YR	NOx	CO	VOC	PM10
SOE 1	G3516TALE	8760	18.3	22.0	4.0	0.0
SOE 2	G3516TALE	8760	19.4	23.3	4.3	0.0
HTR-1	Heater	8760	0.2	0.2	Insig.	-
TK-1	Tank Battery	8760	-		8.5	-
L-1	Tank Truck Loading		-	-	0.3	-
	Total		38.0	45.5	17.1	0.0

	PTE En	nissions (TPY)			
Unit ID	Description	HR/YR	NOx	CO	VOC	PM10
SOE 1	G3516TALE	8760	18.3	1.5	3.0	0.0
SOE 2	G3516TALE	8760	19.4	1.6	3.2	0.0
HTR-1	Heater	8760	0.2	0.2	Insig.	-
TK-1	Tank Battery	8760	_	_	8.5	-
L-1	Tank Truck Loading		-	-	0.3	-
	Total		38.0	3.3	15.0	0.0

Emission Calculations

South Ext Compessor Station

Engine Detail Sheet

Source ID Number

SOE1

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3516TALE

Serial Number

3RC01097

Manufacture Date

2/16/1995

Date in Service

5/17/2007

Potential fuel usage

90.8 MMscf/yr

10365 scf/hr

Emission Controls

Lean Burn

Oxidation Catalyst/AFR

Engine Rating

1265 BHP

Fuel Heating Value

905.0 Btu/scf

Heat Rate

9.38 MMBtu/hr

Engine Heat Rate

7415 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission	n Factor	Rating	Operating Hrs	Estimated	Emissions	Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1265	8760	4.18	18.3	Manuf. Data
CO	0.54	1.80	1265	8760	5.02	22.0	Manuf. Data
VOC	0.10	0.33	1265	8760	0.92	4.0	Manuf. Data
SOx	5.88E-04	0.002	1265	8760	0.01	0.02	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						3.63	
HCHO	0.07	0.25	1265	8760	0.70	3.05	Manuf. Data
Benzene	4.40E-04	0.0015	1265	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1265	8760	0.048	0.21	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1265	8760	0.078	0.34	AP-42, Table 3.2-2

TELIMISSIONS	1		· -				Source of Emission
Pollutant	Emission	n Factor	Rating	Operating Hrs	Estimated	Emissions	
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1265	8760	4.18	18.3	Manuf. Data
CO*	0.04	0.13	1265	8760	0.35	1.5	Manuf. Control Data
VOC*	0.07	0.25	1265	8760	0.69	3.0	Manuf. Control Data
SOx	5.88E-04	0.002	1265	8760	0.01	0.02	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1265	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						1.31	
HCHO*	0.02	0.06	1265	8760	0.17	0.73	Manuf. Control Data
Benzene	4.40E-04	0.0015	1265	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1265	8760	0.048	0.21	AP-42, Table 3.2-2
A cetaldeh v de	8.36E-03	0.0281	1265	8760	0.078	0.34	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficency; Formaldehyde: 76% Control Efficiency

South Ext. Compressor Station

Engine Detail Sheet

Source ID Number

SOE 2

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine Caterpillar

Potential operation

8760 hr/yr

Engine Make Engine Model

G3516TALE

Manufacture Date

7/12/2005

Serial Number Date in Service 4EK04698 2/10/2006

Potential fuel usage

96.2 MMscf/yr

10979 scf/hr

Emission Controls

Lean Burn

Oxidation Catalyst/AFR

Engine Rating

1340 BHP

Fuel Heating Value

905.0 Btu/scf

Heat Rate

9.94 MMBtu/hr

Engine Heat Rate

7415 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission	Factor	Rating	Operating Hrs	Estimated	Emissions	Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO	0.54	1.80	1340	8760	5.32	23.3	Manuf. Data
VOC	0.10	0.33	1340	8760	0.97	4.3	Manuf. Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						3.84	
HCHO	0.07	0.25	1340	8760	0.74	3.23	Manuf. Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

Pollutant	Emission	Factor	Rating	Operating Hrs	Estimated	Emissions	Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO*	0.04	0.13	1340	8760	0.37	1.6	Manuf. Control Data
VOC*	0.07	0.25	1340	8760	0.73	3.2	Manuf. Control Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						1.38	
HCHO*	0.02	0.06	1340	8760	0.18	0.78	Manuf. Control Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

South East Tank and Loading Emission Calculations

Basis

Annual Average Gas Production:

17.0 MMSCFD

Annual Average Crude Production:

21.3 BOPD

0.5

Condensate Storage Emission Estimates

Storage Tank Emission Factor*:

TPY VOC/MMSCFD

Storage Tank VOC Emissions

8.50 TPY Requested

Emission factor derived from known production rates.

Condensate Loading Emission Estimates

Truck Loading Equation:

$$L=12.46$$
 SPM (from AP-42, section 5.2, equation 1)

Calculation Variables:

L loading loss (lbs/1,000 gal)

S saturation factor

0.60 (from AP-42, Table 5.2-1, submerged loading)

P true vapor pressure of liquid loaded at bulk liquid temperature (psia) 2.60 (estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)

M molecular weight of vapor (lb/lb-mole)

50.00 (from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

L = 1.89 lbs/1,000 gal loaded

Truck Loading VOC Emissions 0.31 TPY Requested



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY 40 CFR 49.151

Registration for Existing Sources (FORM REG)

Please submit information to following two entities:

Federal Minor NSR Permit Coordinator	The Tribal Environmental Contact for the specific
U.S. EPA, Region 8	reservation:
1595 Wynkoop Street, 8P-AR	
Denver, CO 80202-1129	
R8airpermitting@epa.gov	If you need assistance in identifying the appropriate
•	Tribal Environmental Contact and address, please
For more information, visit:	contact: R8airpermitting@epa.gov
http://www.epa.gov/region08/air/permitting/tmnsr.html	

A. GENERAL SOURCE INFORMATION

1. Company Name		2. Source Name			
Anadarko Uintah Midstream, LL	С	Willow Creek Compressor Station			
3. Type of Operation		4. Portable Source?	Yes No V		
Natural Gas Compression		5. Temporary Source?	Yes No 🗸		
6. NAICS Code	1	7. SIC Code			
211111		1311			
8. Physical Address (home bas Remote Location near Ouray, U	-				
9. Reservation*	10. County*	11a. Latitude*	11b. Longitude*		
Uinta and Ouray	Uintah	39° 59' 57.41" N	109° 34' 38.90" W		
12a. Quarter-Quarter Section*	12b. Section*	12c. Township*	12d. Range*		
NE NW	32	9S	21E		

^{*} Provide all locations of operation for portable sources

B. CONTACT INFORMATION

1. Owner Name		Title
Anadarko Uintah Midstream, LLC		
Mailing Address PO BOX173779, Denver, CO 80217		
Email Address		
Telephone Number	Facsimile Number	
2. Operator Name (if different from owner)		Title
Same As Owner		
Mailing Address	I .	NAME 24
Email Address		
Telephone Number	Facsimile Number	
3. Source Contact		Title
Clayton Rimer	;	Senior Maintenance Foreman
Mailing Address		
1368 S 1200 E, Vernal, UT 84078		
Email Address		
Clayton.Rimer@anadarko.com		
Telephone Number		
	Facsimile Number	
435-781-7033	Facsimile Number	
435-781-7033 4. Compliance Contact	Facsimile Number Title	
		esentative
4. Compliance Contact	Title	esentative
4. Compliance Contact Chad Schlichtemeier	Title	esentative
4. Compliance Contact Chad Schlichtemeier Mailing Address	Title	esentative
4. Compliance Contact Chad Schlichtemeier Mailing Address PO BOX 173779, Denver, CO 80217	Title	esentative
4. Compliance Contact Chad Schlichtemeier Mailing Address PO BOX 173779, Denver, CO 80217 Email Address	Title	esentative

C. ATTACHMENTS

Include all of the following information as attachments to this form

Narrative description of the operations

Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c)

Identification and description of any existing air pollution control equipment and compliance monitoring devices or activities

Type and amount of each fuel used

Type raw materials used

Production Rates

Operating Schedules

Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated NSR pollutants at your source.

Total allowable (potential to emit if there are no legally and practically enforceable restrictions) emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4), hydrogen sulfide (H_2S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Estimates of the total actual emissions from the air pollution source for the following air pollutants: particulate matter, PM_{10} , $PM_{2.5}$, sulfur oxides (SO_x) , nitrogen oxides (NO_x) , carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H_2SO_4) , hydrogen sulfide (H_2S) , total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

Other

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

D. TABLE OF ESTIMATED EMISSIONS

The following estimates of the total emissions in tons/year for all pollutants contained in your worksheet stated above should be provided.

Pollutant	Total Actual Emissions (tpy)	Total Allowable or Potential Emissions (TPY)	
PM	0	0	PM - Particulate Matter
PM ₁₀	0	0	PM ₁₀ - Particulate Matter less than 10 microns in size
PM _{2.5}	0	0	PM _{2.5} - Particulate Matter less than
SO _x	N/A	N/A	2.5 microns in size SOx - Sulfur Oxides
NO _x	75.3	75.3	NOx - Nitrogen Oxides
СО	9.8	9.8	CO - Carbon Monoxide VOC - Volatile Organic Compound
VOC	45.9	45.9	Pb - Lead and lead compounds Fluorides - Gaseous and particulates
Pb	N/A	N/A	H ₂ SO ₄ - Sulfuric Acid Mist
Fluorides	N/A	N/A	H ₂ S - Hydrogen Sulfide TRS - Total Reduced Sulfur
H ₂ SO ₄	N/A	N/A	RSC - Reduced Sulfur Compounds
H ₂ S	N/A	N/A	
TRS	N/A	N/A	
RSC	N/A	N/A	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (l) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;

- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input,
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Instructions

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

- 1. <u>Company Name</u>: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
- 2. <u>Source Name</u>: Provide the source name. Please note that a source is a site, place, location, etc... that may contain one or more air pollution emitting units.
- 3. <u>Type of Operation</u>: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas well site, tank battery, etc.).
- 4. <u>Portable Source</u>: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.
- 5. <u>Temporary Source</u>: A temporary source, in general, would have emissions that are expected last less than 2 years. Do you expect to cease operations within the next 2 years?
- 6. <u>NAICS Code</u>: North American Industry Classification System. The NAICS Code for your source can be found at the following link → <u>North American Industry Classification System</u> (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).
- 7. <u>SIC Code</u>: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → <u>Standard Industrial Classification Code</u> (http://www.osha.gov/pls/imis/sic_manual.html).
- 8. <u>Physical Address</u>: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.
- 9. Reservation: Provide the name of the Indian reservation within which the source is operating.
- 10. County: Provide the County within which the source is operating.
- 11a & 11b. <u>Latitude & Longitude</u>: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.
- 12a 12d. <u>Section-Township-Range</u>: Please provide these coordinates in Quarter-Quarter Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

B. Contact Information

Please provide the information requested in full.

- 1. Owners: List the full name (last, middle initial, first) of all owners of the source.
- 2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
- 3. <u>Source Contact</u>: The source contact must be the local contact authorized to receive requests for data and information.
- 4. <u>Compliance Contact</u>: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable EPA to understand the type of source being registered and the nature and extent of the air pollutants being emitted.

D. Total Emissions

- 1. <u>Allowable Emissions (See also, Potential to Emit)</u>: Emissions rate of a source calculated using the maximum rated capacity of the source (unless the source is subject to practically and legally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:
 - a) Any applicable standards as set forth in 40 CFR parts 60 and 61;
 - b) Any applicable Tribal or Federal Implementation Plan emissions limitation, including those with a future compliance date; or
 - c) Any emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 2. Potential to Emit: The maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. See Allowable Emissions.
- 3. Actual Emissions: Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. For a source that operated during the entire calendar year preceding the initial registration submittal, the reported actual emissions typically should be the annual emissions for the preceding calendar year, calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. However, if you believe that the actual emissions in the preceding calendar year are not representative of the emissions that your source

will actually emit in coming years, you may submit an estimate of projected actual emissions along with the actual emissions from the preceding calendar year and the rationale for the projected actual emissions. For a source that has not operated for an entire year, the actual emissions are the estimated annual emissions for the current calendar year.

- 4. The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources:
 - (i) Source-specific emission tests;
 - (ii) Mass balance calculations;
 - (iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
 - (iv) Other engineering calculations; or
 - (v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.
- 5. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

DESCRIPTION OF OPERATIONS

The Willow Creek Compressor Station is an existing natural gas compression facility located within the greater Natural Buttes area in Northeastern Utah.

Natural gas from the surrounding field is routed to the compressor station via the gas collection system. Natural gas enters the compressor station through the inlet slug catcher where liquids are gravitationally separated from the stream. Condensate recovered is sent to the blowcase system and put back into the discharge line leaving the station. Gas goes through two stages of compression before discharge from the facility. Water is stored in the atmospheric storage tanks along with condensate collected. Liquids are held in storage tanks onsite until loaded into trucks for transport to sale.

Operating Schedule

The facility operates 8,760 hours per year.

Applicable Standards

This facility is subject to the area source requirements under 40CFR Part 63, Subpart ZZZZ. Three of the four engines on site were manufactured prior to the effective date under 40CFR Part 60, Subpart JJJJ and, therefore, the engines are not subject to the requirements of this subpart. The fourth compressor, WLC 4, was manufactured after the effective date, and is therefore subject to Subpart JJJJ.

Unit Name	Engine Type	Site HP	Make	Model	Serial #	Manufacture Date	Startup Date	JJJJ	ZZZZ
WLC 1	Gas	1340	Caterpillar	G3516 TALE	4EK04793	10/19/2005	5/17/2007	No	Area
WLC 2	Gas	1340	Caterpillar	G3516 TALE	WPW00291	7/7/2006	12/12/2006	No	Area
WLC 3	Gas	1340	Caterpillar	G3516 TALE	WPW00908	5/2/2007	3/24/2008	No	Area
WLC 4	Gas	2370	Caterpillar	G3608 TALE	BEN00411	9/8/2008	8/26/2009	Yes	Area

Emission Sources

Current emitting sources onsite include:

- WLC 1, WLC 2, WLC 3 Caterpillar G3516TALE compressor driver engines
- WLC 4 Caterpillar G3608TALE compressor driver engine
- Two 50 MMSCFD TEG dehydrators each with reboiler
- Three mixed liquids storage tanks and associated liquid tank truck loading
- · One natural gas fired line heater

Control Equipment

Lean-burn technology controls emissions of nitrogen oxides (NOx) from the Caterpillar engines. Additionally, each of the engines is equipped with an oxidation catalyst for control of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde (CH2O).

Federally Enforceable Requirements

The Kerr-McGee Consent Decree signed in 2007 required the existing engines at the Willow Creek Compressor Station to be equipped with oxidation catalyst having a 93% destruction efficiency for CO. The Consent Decree also requires that any new lean-burn engines at the Willow Creek Compressor Station be equipped with an oxidation catalyst meeting the same requirements. Therefore, the CO control requirements are federally enforceable.

The oxidation catalyst also controls VOCs and formaldehyde. Control requirements for these pollutants are enforceable as a practical matter.

The 2007 Consent Decree also requires that dehydration unit emissions be controlled to a maximum of 1 tpy VOC making such requirements federally enforceable. HAP pollutants are controlled in conjunction with the VOC emissions. The HAP emissions would also be an enforceable condition as a practical matter.

Emissions

Emission calculations are presented in tables in the following pages.

Summary Emissions

Willow Creek Compressor

Facility: Station

Location: Section 32 T9S R21E NENW

	Uncontrolled Emissions (TPY)											
Unit ID	Description	HR/YR	NOx	CO	VOC	PM10						
WLC 1	G3516TALE	8760	19.4	24.1	4.3	0.0						
WLC 2	G3516TALE	8760	19.4	24.1	4.3	0.0						
WLC 3	G3516TALE	8760	19.4	24.1	4.3	0.0						
WLC 4	G3608TALE	8760	16.0	57.2	13.7	0.0						
DEHY-1	Dehy/Heater	8760	0.4	0.3	1.0	-						
DEHY-2	Dehy/Heater	8760	0.4	0.3	1.0	-						
TK1-2	Storage Tank Battery	8760	-	-	23.2	-						
HTR-1	Line Heater	8760	0.3	0.2	Insig.	-						
L-1	Tank Truck Loading	8760	-	-	0.8	_						
	Total		75.3	130.2	52.6	0.0						

	PTE Emissions (TPY)											
Unit ID	Description	HR/YR	NOx	CO	VOC	PM10						
WLC 1	G3516TALE	8760	19.4	1.7	3.2	0.0						
WLC 2	G3516TALE	8760	19.4	1.7	3.2	0.0						
WLC 3	G3516TALE	8760	19.4	1.7	3.2	0.0						
WLC 4	G3608TALE	8760	16.0	4.0	10.3	0.0						
DEHY-1	Dehy/Heater	8760	0.4	0.3	1.0	-						
DEHY-2	Dehy/Heater	8760	0.4	0.3	1.0	-						
TK1-2	Storage Tank Battery	8760	-	-	23.2	-						
HTR-1	Heater	8760	0.3	0.2	Insig.	-						
L-1	Tank Truck Loading	8760	-	-	0.8	-						
	Total		75.3	9.8	45.9	0.0						

Emission Calculations

Willow Creek Compressor Stellion

Engine Detail Sheet

Source ID Number

WLC 1

Source Description

4-Cycle Lean Burn Compressor Engine

Engine Usage Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3516TALE

Manufacture Date

10/19/2005

Serial Number

4EK04793

Date in Service

5/17/2007

Potential fuel usage

96.2 MMscf/yr

Emission Controls

Lean Burn

10979 scf/hr

Engine Rating Fuel Heating Value

1340 BHP 905.0 Btu/scf

Oxidation Catalyst/AFR

Heat Rate Engine Heat Rate

9.94 MMBtu/hr 7415 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission Factor		Rating	Operating Hrs	Estimated Emissions		Source of Emission
Ĺ	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO	0.55	1.86	1340	8760	5.49	24.1	Manuf. Data
VOC	0.10	0.33	1340	8760	0.97	4.3	Manuf. Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						4.36	
HCHO	0.09	0.29	1340	8760	0.86	3.75	Manuf. Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

Pollutant	Emission Factor		Rating	Operating Hrs	Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO*	0.04	0.13	1340	8760	0.38	1.7	Manuf. Control Data
VOC*	0.07	0.25	1340	8760	0.73	3.2	Manuf. Control Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						1.51	
HCHO*	0.02	0.07	1340	8760	0.21	0.90	Manuf. Control Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficency; Formaldehyde: 76% Control Efficiency

Willlow Creek Compressor Station

Engine Detail Sheet

Source ID Number

WLC 2

Source Description

4-Cycle Lean Burn Compressor Engine

Engine Usage Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3516TALE

Manufacture Date

7/7/2006

Serial Number Date in Service WPW00291 12/12/2006

Potential fuel usage

96.2 MMscf/yr

10979 scf/hr

Emission Controls

Lean Burn

Oxidation Catalyst/AFR

Engine Rating

1340 BHP

Fuel Heating Value

905.0 Btu/scf 9.94 MMBtu/hr

Heat Rate Engine Heat Rate

7415 Btu/hp-hr

Uncontrolled Emissions

Cheomii oneu I	21113310113		Circuit oned Exissions									
Pollutant	Emission Factor		Rating	Operating Hrs	Estimated Emissions		Source of Emission					
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor					
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data					
CO	0.55	1.86	1340	8760	5.49	24.1	Manuf. Data					
VOC	0.10	0.33	1340	8760	0.97	4.3	Manuf. Data					
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2					
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2					
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2					
HAPs						4.36						
HCHO	0.09	0.29	1340	8760	0.86	3.75	Manuf. Data					
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2					
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2					
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2					

Pollutant	Emission	Emission Factor		Operating Hrs	Estimated Emissions (lb/hr) (tpy)		Source of Emission
Tonutant	(lb/MMBtu) (g/hp-hr)		(hp)	(hrs/yr)			Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO*	0.04	0.13	1340	8760	0.38	1.7	Manuf. Control Data
VOC*	0.07	0.25	1340	8760	0.73	3.2	Manuf. Control Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						1.51	
HCHO*	0.02	0.07	1340	8760	0.21	0.90	Manuf. Control Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

WillowCreek Compressor Steffon

Engine Detail Sheet

Source ID Number

WLC 3

Source Description

4-Cycle Lean Burn Compressor Engine

Engine Usage Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3516TALE

WPW00908

Manufacture Date

5/2/2007

Serial Number Date in Service

3/24/2008

Potential fuel usage

96.2 MMscf/yr

10979 scf/hr

Emission Controls

Lean Burn

Oxidation Catalyst/AFR

Engine Rating

1340 BHP

Fuel Heating Value

905.0 Btu/scf 9.94 MMBtu/hr

Heat Rate Engine Heat Rate

7415 Btu/hp-hr

Uncontrolled Emissions

Pollutant	Emission	Emission Factor		Operating Hrs	Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO	0.55	1.86	1340	8760	5.49	24.1	Manuf. Data
VOC	0.10	0.33	1340	8760	0.97	4.3	Manuf. Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						4.36	
HCHO	0.09	0.29	1340	8760	0.86	3.75	Manuf. Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

Pollutant	Emission Factor		Rating	Operating Hrs	Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.45	1.50	1340	8760	4.43	19.4	Manuf. Data
CO*	0.04	0.13	1340	8760	0.38	1.7	Manuf. Control Data
VOC*	0.07	0.25	1340	8760	0.73	3.2	Manuf. Control Data
SOx	5.88E-04	0.002	1340	8760	0.01	0.03	AP-42, Table 3.2-2
PM10	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0003	1340	8760	0.00	0.00	AP-42, Table 3.2-2
HAPs						1.51	
HCHO*	0.02	0.07	1340	8760	0.21	0.90	Manuf. Control Data
Benzene	4.40E-04	0.0015	1340	8760	0.004	0.02	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0173	1340	8760	0.051	0.22	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0281	1340	8760	0.083	0.36	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficency; Formaldehyde: 76% Control Efficiency

WillowCreekCompressorStation

Engine Detail Sheet

Source ID Number

WLC 4

Source Description

4-Cycle Lean Burn

Engine Usage

Compressor Engine

Engine Make

Caterpillar

Potential operation

8760 hr/yr

Engine Model

G3608TALE

Manufacture Date

9/9/2008

Serial Number Date in Service BEN00411

155.8 MMscf/yr

8/26/2009

Potential fuel usage

17784 scf/hr

Emission Controls

Lean Burn

Oxidation Catalyst/AFR

Engine Rating

2370 BHP

Fuel Heating Value

905.0 Btu/scf 16.09 MMBtu/hr

Heat Rate Engine Heat Rate

6791 Btu/hp-hr

Uncontrolled Emissions

Cheonit offed Panissions										
Pollutant	Emission	Emission Factor		Operating Hrs	Estimated Emissions		Source of Emission			
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor			
NOx	0.23	0.70	2370	8760	3.66	16.0	Manuf. Data			
CO	0.81	2.50	2370	8760	13.06	57.2	Manuf. Data			
VOC	0.19	0.60	2370	8760	3.13	13.7	Manuf. Data			
SOx	5.88E-04	0.002	2370	8760	0.01	0.04	AP-42, Table 3.2-2			
PM10	7.71E-05	0.0002	2370	8760	0.00	0.01	AP-42, Table 3.2-2			
PM2.5	7.71E-05	0.0002	2370	8760	0.00	0.01	AP-42, Table 3.2-2			
HAPs						6.93				
HCHO	0.08	0.26	2370	8760	1.36	5.95	Manuf. Data			
Benzene	4.40E-04	0.0014	2370	8760	0.007	0.03	AP-42, Table 3.2-2			
Acrolein	5.14E-03	0.0158	2370	8760	0.083	0.36	AP-42, Table 3.2-2			
Acetaldehyde	8.36E-03	0.0258	2370	8760	0.135	0.59	AP-42, Table 3.2-2			

Pollutant	Emission Factor		Rating	Operating Hrs	Estimated Emissions		Source of Emission
	(lb/MMBtu)	(g/hp-hr)	(hp)	(hrs/yr)	(lb/hr)	(tpy)	Factor
NOx	0.23	0.70	2370	8760	3.66	16.0	Manuf. Data
CO*	0.06	0.18	2370	8760	0.91	4.0	Manuf. Control Data
VOC*	0.15	0.45	2370	8760	2.35	10.3	Manuf. Control Data
SOx	5.88E-04	0.002	2370	8760	0.01	0.04	AP-42, Table 3.2-2
PM10	7.71E-05	0.0002	2370	8760	0.00	0.01	AP-42, Table 3.2-2
PM2.5	7.71E-05	0.0002	2370	8760	0.00	0.01	AP-42, Table 3.2-2
HAPs						2.41	
HCHO*	0.02	0.062	2370	8760	0.33	1.43	Manuf. Control Data
Benzene	4.40E-04	0.0014	2370	8760	0.007	0.03	AP-42, Table 3.2-2
Acrolein	5.14E-03	0.0158	2370	8760	0.083	0.36	AP-42, Table 3.2-2
Acetaldehyde	8.36E-03	0.0258	2370	8760	0.135	0.59	AP-42, Table 3.2-2

^{*}CO: 93% Control Efficiency; VOC: 25% Control Efficiency; Formaldehyde: 76% Control Efficiency

Willow Creek Tank and Loading Emission Calculations

Basis

Annual Average Gas Production: 46.4 MMSCFD

Annual Average Crude Production: 58.0 BOPD

Condensate Storage Emission Estimates

Storage Tank Emission Factor*: 0.5 TPY VOC/MMSCFD

Storage Tank VOC Emissions 23.20 TPY Requested

Emission factor derived from known production rates.

Condensate Loading Emission Estimates

Truck Loading Equation:

$$L = 12.46 \frac{\text{SPM}}{T}$$
 (from AP-42, section 5.2, equation 1)

Calculation Variables:

- L loading loss (lbs/1,000 gal)
- S saturation factor

0.60 (from AP-42, Table 5.2-1, submerged loading)

- P true vapor pressure of liquid loaded at bulk liquid temperature (psia) 2.60 (estimated from AP-42, Table 7.1-2 for Crude Oil RVP 5)
- M molecular weight of vapor (lb/lb-mole)

50.00 (from AP-42, Table 7.1-2 for Crude Oil RVP 5)

T temperature of liquid loaded (°R)

514.67 (55 °F)

L = 1.89 lbs/1,000 gal loaded

Truck Loading VOC Emissions 0.84 TPY Requested

